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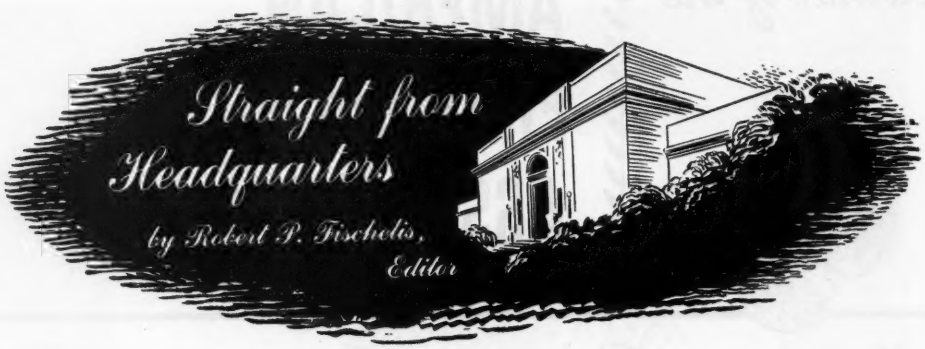


FDA Inspection Authority Restored in Modified Form

WHILE the passage of H.R. 5740 in the House of Representatives restores the inspection authority which was upset by the Supreme Court decision in the Cardiff case, the House actually handed the Food and Drug Administration a rebuke in passing this legislation in the form it finally emerged. This should make those who are now administering the Federal Food and Drug Act sit up and take notice. Continued pursuance of some of the methods, which have characterized certain procedures of this important Federal agency recently, cannot help but reduce the public respect for the FDA which had been built up to a high point over the years.

The public hearings on the "factory inspection" amendment were revealing in many respects. While the chairman of the Committee on Interstate and Foreign Commerce, before which these hearings were held, was lavish in his praise of the work of the FDA, he drew upon the pioneer work of Dr. Harvey Wiley and the early history of the administration to support his complimentary remarks.

It was clear that the committee was more nauseated than impressed with the "chamber of horrors" technique followed with some success by the FDA in the past in influencing favorable action on legislative appropriations and bids for additional authority. A number of Congressmen, both in the committee hearings and on the floor of the House, indicated that the tales of filth and rodent hair and excrement in foods, and the heart-rending recitals of watered fowl and adulterated butter, made them suspicious of all food and left them for a time without the urge to eat anything anywhere.

The wholesale indictment of the food and drug industries, by magnifying the deeds of fringe operators out of all proportion, is beginning to boomerang. After all, people do have eyes and a sense of smell and taste and they know that all but a few industrial operators are responsive to their conscience. Furthermore, they also know they are paying taxes for state and municipal policing of their food and drug supplies, as well as for Federal policing, which should be confined to interstate commerce. The Food and Drug Administration has done excellent work in its laboratories and inspection service. It has a lot of earnest and able workers on its staff, but at the moment it seems to be the victim of its press agents, who apparently feel that unless they can get a story a week into some popular magazine and into the newspapers, telling about broken homes and human derelicts resulting from the use of drugs or the consumption of filthy foods, they have not earned their salaries.

With the opportunity open to these people to tell the interesting stories about the splendid record of scientific control of the quality of antibiotics and vitamins; the protection of the public in the launching of new and untried drugs; and the consistently good influence of the Food and Drug Administration in keeping label claims within bounds, we wonder why they have to dip into the gutter to try to create headlines.

There is such a thing as stooping too low to conquer, and the press agentry of the

FDA is a good example of that fact. Instead of reducing laboratory and inspection personnel as a result of appropriation cuts, we would strongly suggest that the Administration drop its press agents and let its professional staff, who are respected for their ability and honesty and fairness, do the writing of press releases and newspaper and magazine articles for a while. It would also be in order for representatives of the FDA who appear before appropriation committees to be less emotional and more factual in their pleas.

The form in which the "factory inspection" bill was passed and the comments in the committee report recommending passage of the bill, as well as the remarks on the floor of the House in the debate on the bill, leave a record of the intent of Congress which should be notice to the Courts that "factory inspection" means what these words signify ordinarily, and not what the FDA lawyers and other prosecuting personnel in the administration would like to stretch it to mean.

Mr. Wolverton, chairman of the Committee on Interstate and Foreign Commerce of the House of Representatives in answering a question put by Representative Hays of Ohio as to whether it was the intent of the bill to grant authority to inspect the prescription files in a drug store stated: "I can only speak for myself, that in my opinion individual prescription files in a drug store in themselves are not interstate commerce or the subject of interstate commerce, and this Act is based upon interstate commerce."

Thereupon Mr. Hays stated: "I do not think we ought to have every Federal inspector look through prescriptions fishing for something." Mr. Wolverton agreed.

Mr. Priest, in his discussion of the bill said: "I am certain that there is nothing in this bill intended by the committee to authorize inspection of prescription files." He also stated that it was his belief that "it has never been the intention of the committee in this Act to grant authority for inspection of prescription files."

Mr. Younger of California, in his statement to the House, included these words: "It is not the intent, and it certainly was not my intent, that this law, as now passed, gives the inspector the right to inspect or require to be inspected formulas, personnel files, prescription files in drug stores, and similar things of that nature." At another point in the debate Mr. Younger, of California, said: "When Mr. Crawford, of the Food and Drug Administration, was before us in the hearings, I asked specifically whether he thought under 704 he had the right to inspect prescription files, and his answer was, 'Yes.' It is clear that that was not the legislative intent; is not that right?"

The reply by Mr. Harris of Arkansas was: "It certainly was not."

Mr. Younger then asked: "Under 704 they have no right to do that?" Mr. Harris answered "No."

Mr. Durham of North Carolina in commenting on the bill said, on the floor of the House: "If we were to go into the common ordinary files of prescriptions, in my opinion that would be bad. I am glad the committee is making it certain that is not the intent."

The FDA could have had a stronger inspection bill if it had been fair enough to call all interested groups into a conference and laid its problems on the table and asked for cooperation. Instead, it followed tactics which proved partially successful in connection with previous amendments to the Food, Drug and Cosmetic Act, but which are not apt to be successful again, namely to get the approval of one or two groups which it considered most influential in an effort to put over a fast amendment and ignore the rest of those who had a vital interest, both public and professional, in this legislation. However, some members of Congress were just waiting for an opportunity to open the inspection section of the Act and "liberalize" it in the interests of some of their constituents who are properly subject to inspection under interstate commerce policy.

A general statement which President Eisenhower was induced to put into his State of the Union Message, and with which everybody could agree, was relied on to gloss over the request for implied authority for much more than "factory inspection." The suggestions of such organizations as the American Medical Association, the AMERICAN PHARMACEUTICAL ASSOCIATION, the National Association of Retail Druggists and others to safeguard the integrity of prescription files and avoid duplication of effort in the regulation of the practice of the healing arts were ignored by the FDA. However, they were not ignored by the House of Representatives and we do not believe that they will be ignored by the Senate.

The Student Inspection Trip

By Donald T. Meredith†

THE so-called student inspection trip or tour through commercial pharmaceutical laboratories is now a well-established fixture in the academic life of our colleges of pharmacy. This statement is borne out by the number of schools making these trips—some annually and some every other year. One of the Midwest companies, for example, reports that in the period of time since March, 1947, every pharmacy school in the United States, with the exception of three, visited their laboratories. Also, during the period from September, 1951, through June, 1952, which is taken as the last academic year, a total of 64 schools in the United States and several from Canada visited one or more of the manufacturers.

In order that this survey would represent as nearly as possible data that are industry-wide, rather than a one-company picture, a questionnaire was sent to a selected group of 11 pharmaceutical companies thought to have an interest in this activity. Of this group, 10 submitted replies. To get a picture of the over-all scope of plant tours, data in addition to that pertaining to pharmacy school visits were obtained. This was done with the idea of getting additional material which might make it possible to determine broader objectives for plant tours by considering all the different groups which are included in the activity.

The questionnaire and a tabulation of the replies are shown in the table opposite.

The tabulation shows a total of 143 school-visits. This apparent discrepancy from the figure of 64 schools given earlier results from the fact that many schools visit more than one company. The actual breakdown shows: 23 schools visited one plant only, 24 schools visited two plants, 13 schools visited three plants, 4 schools visited four plants.

The tabulation also shows 8,810 student-visits which again gives a false picture due to multiple-company visits of many schools. Group sizes as reported by the various participating companies show that approximately 4,600 different students visited one or more of the plants during the past academic year. These figures show the scope of the activity and are on the conservative side, since they do not represent 100 per cent coverage of the pharmaceutical industry.

As shown by the tabulation, these were predominantly senior and junior students. However, based on our own experience, a few graduate students and students below the junior level are included.

A consideration of the time used for the tours shows that two companies use one-half day, four use one day, two use one and one-half days, and two use two days. Also indicated is the fact that a majority of the companies entertain classes from other types of professional schools and also include groups of professional people such as pharmacists, physicians, nurses, etc. Of interest, too, is the fact that seven of the companies include nonprofessional, or lay groups, and six companies include high school groups in their tour program.

Objectives

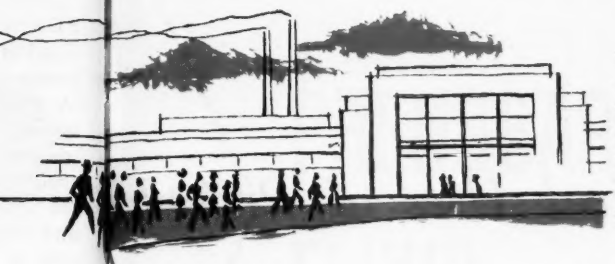
Before listing the objectives, it should be pointed out that they are specifically those of one company, the one with which the writer is associated, but in general are pretty well borne out as being those of the whole industry by the comments of other companies who participated in this survey. These comments will be cited later.

The over-all objective of this program, from the host company's standpoint, is to improve the company's public relations. For example, an executive of one of the other companies made this statement, "We can't prove it in a dollar and cents way, but we are firmly convinced that this is the most profitable form of advertising we use." Advertising, as you are aware, is one of the tools of public relations.

The purpose of any public relations program is, of course, to promote good will for the company and ultimately increase sales of company merchandise. To do this, it must of necessity obtain and hold the respect and confidence of those groups upon which company success depends, its employees, its customers, its community, and that very important but hard to classify fellow who numbers in the hundreds of millions, Mr. John Q. Citizen.

Presented before the Section on Education and Legislation, A.PH.A. Convention, Philadelphia, Pa., August, 1952.

† Trade and Guest Relations Section, The Upjohn Company, Kalamazoo, Mich.



Students, educators, and manufacturers who have questioned the value of plant inspection trips will find the answers to most of their questions in Mr. Meredith's paper.

Specifically, a primary objective is customer relations. The majority of the pharmacy school and other professional visitors are either customers or potential customers, and this intangible thing known as "good will" will influence their future reception of company salesmen, as well as company merchandise.

As a second objective, we include professional, technical, and sales employee recruitment. Some of these visitors are potential employees, and their final decision on accepting employment is usually consciously or unconsciously influenced by what they know and feel about a company.

A third objective has to do with company employees. It is a widely accepted fact that next to his home and family, a person's major interest is in his job and the company he works for. It is felt that these tours are in a sense a "morale booster;" that is, it gives the employee an added source of satisfaction and pride to know that people are interested in his job and his company.

A fourth objective is applicable to the nonprofessional visitor. It is felt that trips through a pharmaceutical plant help to "sell" pharmacy to these pepole and raise their opinion of the profession as a whole, that is, the retail store and pharmaceutical education, as well as manufacturing pharmacy. When these visitors are from the plant community the tour can be a strong factor

(*Continued on page 452*)

TABULATION OF REPLIES TO QUESTIONNAIRE[a]

Company	A	B	C	D	E	F	G	H	I	J
1. How many colleges of pharmacy visited your plant during the past school year year (Sept., '51, through June, '52)?	52	20	1	20	4	36	3	1	1	5
2. How many pharmacy students made these tours?	2,960	1,075	43	1,227	450	2,462	150	30	10	403
3. Do you include only Seniors, Juniors and Seniors, Whole School?	Junior and Senior	Junior and Senior	Senior	Junior and Senior	Senior	Junior and Senior	Junior and Senior	Senior	Junior and Senior	Senior
4. Time used for the tour, 1/2 day, 1 day, 1 1/2 days, 2 days?	2 days	1 1/2 days	1 day	1 day	1 1/2 days	2 days	1 day	1/2 day	1/2 day	1 day
5. What other school groups do you entertain, Medical, Dental, Veterinary, Nursing, College, Chemistry, High School?	Medical Dental Chem.	Medical Vet. Nursing Chem. H. S.	Medical Dental Vet. Nursing Chem. H. S.	Medical Nursing Chem. H. S.	Vet.	Medical Dental Vet. Nursing Chem.	Medical Nursing Chem. H. S.	Medical Vet. Nursing Chem. H. S.	Medical Chem.	Medical Nursing Chem. H. S.
6. What professional groups, do you include, Pharmacists, Physicians, Dentists, Nurses, Veterinarians, Teachers?	Pharm. Phys. Nurses Teachers	Pharm. Phys. Nurses Dentists Vets. Teachers	Pharm. Phys. Nurses Dentists Vets. Teachers	Pharm. Phys. Dentists Nurses Vets. Teachers	None	Pharm. Phys. Dentists Nurses Vets.	Pharm. Phys. Nurses Teachers	Pharm. Phys. Nurses Vets. Teachers	Pharm. Phys.	Pharm. Phys. Nurses Teachers
7. Do you ever entertain "lay" groups?	No	Yes	Yes	Yes	No	No	Yes	Yes	Yes	Yes
8. What is your reaction to tours by pharmacy schools?	The replies to this question will be found later in the paper.									

[a] The author is indebted to the following companies for the above data: Abbott Laboratories; Ciba Pharmaceutical Products, Inc.; Lederle Laboratories Division, American Cyanamid Company; Eli Lilly and Company; Parke, Davis & Company; Sharpe & Dohme, Inc.; E. R. Squibb & Sons; Smith, Kline & French Laboratories; The Upjohn Company; Winthrop-Stearns, Inc.

Some Pharmaceutical Uses of Propyle

By Salvatore J. Greco†

As STATED in the first of these articles (1), the objective of this work is to study the substitution of propylene glycol for both alcohol and glycerin in some official preparations. It was found that clear, stable preparations of Terpin Hydrate and Codeine Elixir could be prepared by substituting propylene glycol for all of the alcohol and glycerin in the official formula. When these preparations were used to compound certain prescriptions, the stability, in a few instances, was not comparable to the official product. Subsequently, a more satisfactory formula was developed, whereby all of the glycerin and 95 per cent of the alcohol were replaced by propylene glycol.

With the same objective in mind, it was decided to experiment with Phenobarbital Elixir U.S.P. Recently, Boeke and Van Horne (2) reported a stable product results when all of the alcohol and glycerin in Phenobarbital Elixir is replaced with an equal volume of propylene glycol.

Experimental and Results

The formula for Phenobarbital Elixir U.S.P. is as follows:

Phenobarbital	4 Gm.
Sweet Orange Peel Tincture	30 cc.
Amaranth Solution	10 cc.
Glycerin	450 cc.
Alcohol	125 cc.
Syrup	150 cc.
Distilled Water *q.s.*	1000 cc.

Nine variations of the official elixir were prepared, containing 150, 200, 250, 300, 350, 400, 450, 500, and 575 cc. of propylene glycol in place of all of the alcohol and glycerin. Distilled water was used to make up the difference in volume.

The preparations containing 15, 20, 25, and 30 per cent by volume of propylene glycol were not clear. Precipitation of phenobarbital was observed in the 15, 20, and 25 per cent solutions. Preparations containing 35 per cent or more of propylene glycol were clear at the time of preparation. The clear preparations were stored at room temperature for 18 months, at 35° for four weeks, and at 10° for two weeks. All preparations remained clear.

In view of these observations, subsequent work was performed only with the preparation containing 35 per cent propylene glycol, the least amount which produced a clear solution.

The relative viscosity of the 35 per cent preparation was found to be less than that of the official product. If distilled water equals 1.00, the relative viscosity of the propylene glycol preparation is 1.17 and that of the official elixir is 1.58.

The taste of the 35 per cent preparation was slightly more tart than the official product; nevertheless, it had a rather pleasant taste without the characteristic aftertaste of propylene glycol.

It has been proved many times that a clear preparation is not necessarily satisfactory from the viewpoint of compatibility. Therefore, representative prescriptions containing Phenobar-

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II

PHENOBARBITAL ELIXIR

Dr. Greco's first paper, on the use of propylene glycol in terpin hydrate and codeine elixir, appeared in the September, 1951, issue of This Journal.

bital Elixir were prepared with both the official elixir and the preparation containing 35 per cent propylene glycol. The following prescriptions were compounded:

1.	Atropine Sulfate	gr. 1/10
	Tr. Hyoscyamus	ʒ iss
	Elix. Phenobarbital *q.s.*	ʒ iii
2.	Sod. Bromide	ʒ iii
	Pot. Bromide	ʒ iss
	Elix. Phenobarbital *q.s.*	ʒ iii
3.	Tr. Belladonna	ʒ i
	Sod. Phenobarbital	gr. xxiv
	Aq. Menth. Pip.	ʒ i
	Elix. Phenobarbital *q.s.*	ʒ iv
4.	Pot. Iodide	5.0
	Syr. Ipecac	7.0
	Ephed. Sulf. 1%	10.0
	Elix. Benadryl	25.0
	Elix. Phenobarbital *q.s.*	60.0
5.	Tr. Hyoscyamus	ʒ ss
	Pot. Citrate	ʒ iv
	Elix. Phenobarbital	ʒ i
	Dist. Water *q.s.*	ʒ iii
6.	Pot. Bromide	ʒ ii
	Dist. Water	ʒ vi
	Elix. Phenobarbital	ʒ iss
	Elix. Betalin S *q.s.*	ʒ iii

After observation for two weeks, the appearance of each pair of prescriptions made from the official elixir and the 35 per cent propylene glycol preparation was identical. This indicates that the stability of the propylene glycol preparation is comparable to that of the official elixir.

In view of the results, it is believed that the following formula could successfully replace that of Phenobarbital Elixir U.S.P., and it is so recommended. This formula results not only in a much less expensive preparation but also in one which is entirely satisfactory for use during a period of critical shortage of alcohol and glycerin.

Phenobarbital	4 Gm.
Sweet Orange Peel Tincture	30 cc.
Amaranth Solution	10 cc.
Propylene Glycol	350 cc.
Syrup	150 cc.
Distilled Water *q.s.*	1000 cc.

Summary

1. A substitute formula has been developed for Phenobarbital Elixir U.S.P., using the minimum amount of propylene glycol (35 per cent) to replace all of the alcohol and glycerin.

2. Its stability is comparable to the official elixir.

3. This preparation is quite inexpensive when compared with the official product or with similar preparations of phenobarbital containing more propylene glycol.

4. The relatively small quantity of propylene glycol in the preparation enables it to have a pleasant taste.

REFERENCES

(1) Greco, S. J., This Journal, **12**: 536 (1951).
(2) Boeke, R. G., and Van Horne, R. L., This Journal, **14**: 166 (1953).

SUSPENSIONS OF SULFONAMIDES

By Wendle L. Kerr† and Louis C. Zopf‡

A COMBINATION of two or three sulfonamides has been found to have several advantages from a therapeutic point of view. A mixture of two or three sulfonamides is significantly more soluble than any single component in the same total amount (1, 2). This markkdly reduces some of the toxic effects of sulfonamide therapy (2). The blood levels obtained with a mixture of two sulfonamides (3), as well as those obtained with a mixture of three sulfonamides (2), are as high or higher than when equal amounts of a single sulfonamide are used. This increased therapeutic efficiency has stimulated a renewed interest in the sulfonamides.

Combinations of two sulfonamides were the first to be investigated (3, 4, 5). Later experimentation revealed the triple mixtures to be more efficient (6, 7).

Many children and some adults have difficulty in swallowing medication in the form of tablets and capsules. Since most sulfonamides are given in these forms, our efforts were directed toward building a satisfactory liquid preparation for oral administration.

Because of the low degree of solubility of the sulfonamides and the instability of the aqueous solutions of the sodium derivatives, it appeared that a suspension of basic sulfonamide would be more desirable.

The purpose of this investigation was to prepare a stable, palatable, and homogeneous oral preparation containing 0.166 Gm. of each of three sulfonamides per 5 cc. Special effort was made to develop a uniformly suspended product without sacrificing pourability.

Chiba and Phillips (8), using 0.7 per cent pectin, prepared a suspension containing 0.25 Gm. of sulfadiazine per 4 cc. Whittet (9), reported the use of 1 gr. of Manucol 111[a] per fluid ounce to prepare a suspension which contained 0.5 Gm. of colloidal sulfanilamide per teaspoonful. These papers plus certain commercial brochures comprise the bulk of the literature. Some commercial suspensions of multiple sulfonamides are available, but none seem to have the desired shelf-life stability.

Experimental

The selection of the sulfonamides to be used was the first problem.

According to Flippen and Boger (10), in order to minimize the potentialities of drug sensitization, there appeared to be an advantage in limiting the choice of compounds to those of closely similar structures. Sulfadiazine, sulfamerazine, and sulfamethazine[b] are pyrimidine derivatives. Sulfamerazine is the monomethyl derivative of sulfadiazine while sulfamethazine is the dimethyl derivative. The use of these three sulfonamides was desirable also because they possess a low incidence of toxicity and have been proved to be of equal value therapeutically. Because of the advantages of these three sulfonamides, they were selected as the therapeutic combination for this study. They were used in powder form.

The problem next resolved itself into a study of suspending agents, flavors, preservatives, levigating agents, and methods for incorporation.

Fifteen different suspending agents were studied in various concentrations. The ones of choice were: Kelgin LV[c], pectin, tragacanth, and bentonite.

Early in this investigation it was noted that the suspension possessed a bitter taste which persisted for a considerable time. In an attempt to overcome this, the following syrups were tried as masking agents:

Cacao Syrup N.F.[d]
Cherry Syrup N.F.
Cinnamon Syrup (special)[e]
Citric Acid Syrup U.S.P.
Citric Acid Syrup (double strength)[f]
Orange Syrup U.S.P.
Raspberry Syrup U.S.P.
Syrup U.S.P.

All cacao flavored products gave considerable difficulty. This was manifested by the varying viscosities of the finished products and the appearance of a thin film of clear chocolate-colored liquid on the surface of the suspension after the product had aged for a few days. It was decided that this was due to the varying amounts of theobroma oil in the cacao.

Since the syrups used did not completely mask the persistent bitterness of the sulfonamides, sodium saccharin 0.1 to 0.3 per cent was added. By tasting suspensions of the individual sulfonamides it was learned that this undesirable taste was apparently due to the sulfamethazine and sulfamerazine. The addition of glycerin aided materially in reducing this

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Presented before the Section on Practical Pharmacy, A. PH. A. Convention, Buffalo, N.Y., August, 1951.

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[a] Sodium Alginate.

[b] Sulfamethazine furnished by American Cyanamid Company.

[c] Trade name of Kelco Chemical Company for sodium alginate low viscosity.

[d] Chocolate furnished by Hershey Chocolate Corporation.

[e] Sucrose 80%, Solvent 20%. Solvent: Cinnamon Oil 5 cc., Ethyl Alcohol 80 cc., Distilled Water *q.s.*, to make 1000 cc.

[f] Lemon Tincture 2%, Citric Acid 2%.

AMIDES FOR ORAL ADMINISTRATION

The authors present eight formulas with which they have experimented.

undesirable but characteristic taste. After trying various amounts, 10 per cent was considered as optimum, and this quantity of glycerin was added to all formulas.

Fermentation of the syrups and mold growth were encountered early in the investigation. The following were tried as preservatives: Zephiran Chloride,[9] benzoic acid, and a combination of methylparaben and propylparaben. The "parabens" were the most effective and had the least disadvantages, so they were used in our work in a stock solution of ethyl alcohol containing 50 mg. of each "paraben" per cc.

Method

All suspending agents were used in liquid form when being incorporated with the sulfonamides. When Kelgin LV or pectin was used, the material was triturated first with glycerin for several minutes to wet the particles. Next, a large quantity of water was added at once to the glycerin nucleus and triturated until a smooth paste resulted.

Various methods of incorporation were studied. While no single method seemed superior, a general method was developed which proved satisfactory. Using a mortar and pestle, a smooth paste was made of the sulfonamides and the syrup. The glycerin was added with trituration. This step was omitted when the glycerin was used to wet the Kelgin or the pectin. Next, the suspending agent in liquid form was added with continued trituration. Finally, the preservative and then the aqueous solution of sodium saccharin were added with stirring. The product was brought to volume, stirred thoroughly, and passed through a hand homogenizer.

Following the preliminary investigation, the experimental formulas listed in Table I were prepared in 500-cc. quantities. After homogenization, each lot was stirred and divided into four aliquot portions which were packaged in four-ounce, wide-mouth, screw cap bottles. Each bottle was labeled with the formula number. The bottles of each lot were designated as A, B, C, and D.

All samples were aged one week at room temperature (23° C.). Samples "D" were then used for pH readings, which ranged from 3.7 to 7.15, and microscopic examination. Using a small pipette, three samples were withdrawn from each "D" suspension and smears were made for microscopic examination.

Sample (1) 1–2 cm. below the surface
Sample (2) from the approximate center of product
Sample (3) 1–2 cm. from the bottom

The technique used to made the smears from the samples was similar to that employed in making a blood smear. Better smears resulted when the slides were held parallel to one another. The smears were studied with a high power objective using a 10× ocular with a resulting magnification of 430. The three smears of each specimen were compared for approximate frequency and quantity of sulfonamide crystals or particles of crystals.

Samples "A," "B," and "C" were allowed to stand for an additional 21 days. Samples "A" were stored at room temperature. Samples "B" were stored at

(Continued on next page)

[9] Trade name of Winthrop-Stearns for benzalkonium chloride.

TABLE I.—Experimental Formulas
(Quantities in Gm. or Cc.)

Ingredients	Formula No. 1	2	3	4	5	6	7	8
Sulfadiazine	16.666	16.666	16.666	16.666	16.666	16.666	16.666	16.666
Sulfamethazine	16.666	16.666	16.666	16.666	16.666	16.666	16.666	16.666
Sulfamerazine	16.666	16.666	16.666	16.666	16.666	16.666	16.666	16.666
Kelgin LV	7.5	7.5	.....	.....	.....	.....	.....	.....
Bentonite Magma	.....	.....	100.0	100.0	.....	.....	.....	.....
Tragacanth (2% suspension)	.....	.....	.....	.....	200.0	200.0	.....	.....
Pectin	.....	.....	.....	.....	.....	.....	12.5	12.5
Chocolate Syrup	200.0	.....	250.0	.....	200.0	.....	150.0	.....
Cinnamon Syrup (special)	.....	200.0	.....	300.0	.....	200.0	.....	150.0
Glycerin	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0
Methylparaben	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
Propylparaben	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
Alcohol	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Sodium Saccharin	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Cinnamon Water	.....	.....	.....	.....	.....	.....	.....	*q.s.*
Distilled Water	*q.s.*	*q.s.*	*q.s.*	*q.s.*	*q.s.*	*q.s.*	*q.s.*	.....
To make	500.0	500.0	500.0	500.0	500.0	500.0	500.0	500.0

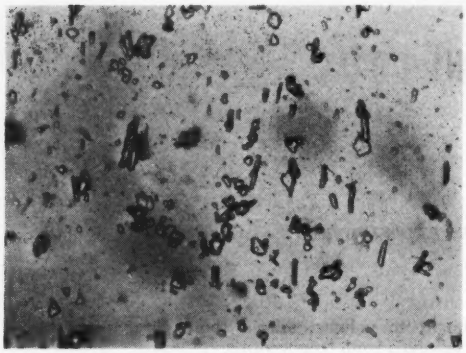
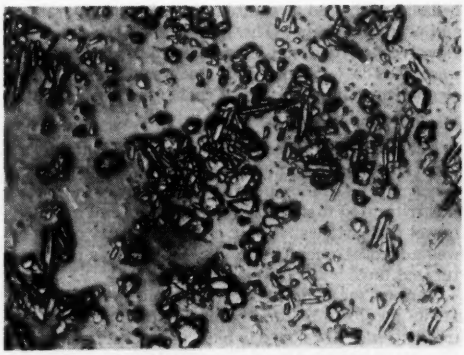


Figure 1. *Formula 8, Smear 1. Pectin Suspension of Triple Sulfonamides. Twenty-one days at 38° C.*

Figure 2. *Formula 8, Smear 3. Pectin Suspension of Triple Sulfonamides. Twenty-one days at 38° C.*



From preceding page

38° C. and Samples "C" were refrigerated at 10° C. At the end of the four weeks, three samples were taken from all "A," "B," and "C" specimens and smears were made. Samples of "B" specimens were also withdrawn and examined microscopically following storage at 38° C. for 48 hours and 168 hours.

Photomicrographs were taken of representative fields to illustrate desired points. (See Figures 1, 2, 3, 4, 5, 6.)

The macroscopic examination conducted every 12 hours consisted of examining the product in an attempt to determine the presence of any settling or separation.

A pour test was conducted at the end of the 4 weeks. This consisted of gently pouring the suspension from its original container into a beaker. This afforded the opportunity of observing any precipitate as well as determine the fluidity of the suspension.

Discussion

The satisfactory suspending agents were Kelgin LV, pectin, tragacanth (2 per cent suspension), and bentonite (magma).

The products containing Kelgin LV left no undesirable taste or sensation in the mouth. The pectin suspensions had a tendency to be viscid. This was especially true when pectin was combined with Cacao Syrup. Tragacanth did not maintain complete suspension in all cases, and it gave a taste to the product when more than 1 per cent of tragacanth was used. The settling was easily, evenly, and rapidly resuspended by slight agitation. Bentonite suspensions imparted a slightly astringent sensation to the mouth. If the amounts of Bentonite Magma and Cacao Syrup were increased more than the formula, the resulting product tended to be thicker than was desirable.

The problem of developing a palatable preparation was continuous and constantly changing as various suspending agents were used. Cacao Syrup and cinnamon syrup (special) were the most satisfactory flavoring agents for they imparted a pleasant flavor to the product and were most successful in masking the undesirable bitter taste. The quantity of either syrup used needed to be varied according to the suspending agent so that the product would not be too thick but would have a palatable taste. All the syrups were found to be good levigating agents.

The addition of 0.1 per cent sodium saccharin improved the taste of both the chocolate and cinnamon flavored preparations. This concentration helped to overcome the bitter taste without introducing the undesirable taste which frequently accompanies the use of saccharin.

The stability study which was carried out was an important phase of this problem. The only formula in which separation occurred in all three of the specimens was Formula No. 6 in which the sulfonamides were easily resuspended by agitation of the container.

All of the chocolate flavored formulas, except No. 1 and those bottles stored at 10° C., demonstrated a perceptible amount of supernatant liquid. This was more evident in the products stored at 38° C.

Of the specimens stored at 38° C., Formula No. 8 was the only one which demonstrated macroscopic signs of settling. It was substantiated by examination of the smears. (See Figures 1 and 2.)

The microscopic examination of the prepared slides substantiated the results of the macroscopic studies with few exceptions. These exceptions were

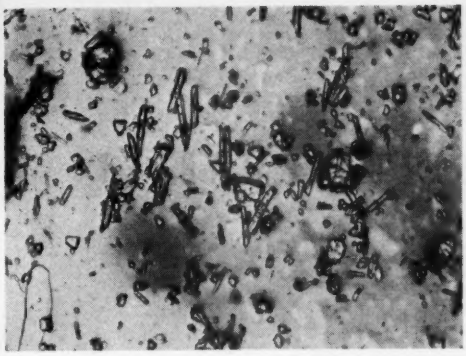


Figure 3. *Formula 2, Smear 1. Kelgin LV Suspension of Triple Sulfonamides. Twenty-one days at 38° C.*

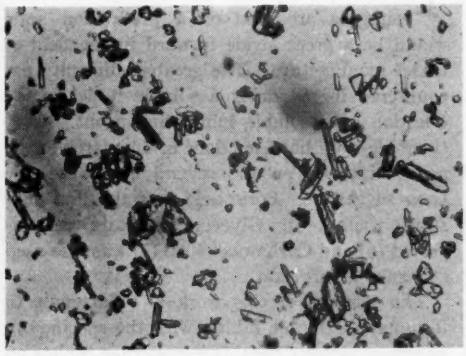
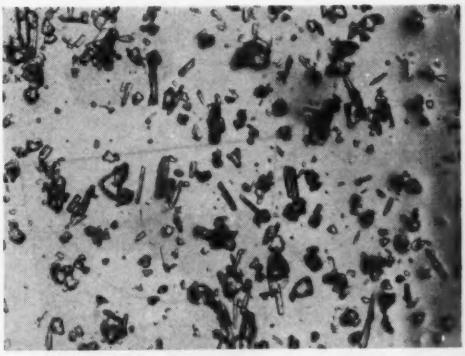


Figure 4. *Formula 2, Smear 3. Kelgin LV Suspension of Triple Sulfonamides. Twenty-one days at 38° C.*



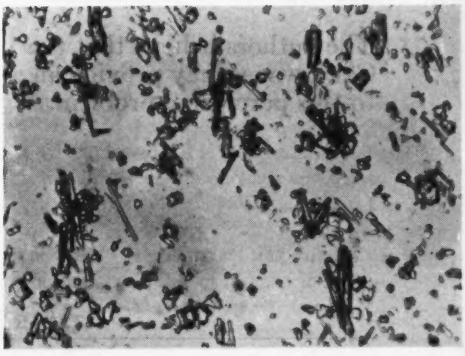


Figure 5. *Formula 2, Smear 1. Kelgin LV Suspension of Triple Sulfonamides. Twenty-eight days at 23° C.*

Figure 6. *Formula 2, Smear 3. Kelgin LV Suspension of Triple Sulfonamides. Twenty-eight days at 23° C.*

Formulas Nos. 4, 5, and 6, which had been stored at room temperature. The microscopic examination of the smears revealed a small amount of settling which had not been detected by the macroscopic method. This settling was easily redistributed and resuspended by agitation of the container.

Figures 3 and 4 revealed that samples 1 and 3 from Formula No. 2 stored at 38° C. for 21 days, contained approximately equal frequency and quantity of sulfonamide crystals or particles of crystals. Thus, if any settling had occurred, we were unable to detect it by this method.

Smears obtained from additional lots of Formula No. 2 (see Figures 5 and 6) serve to substantiate the macroscopic observations.

The results of the pour test are listed in Table II.

Each product of the various formulas was judged according to the extent to which it fulfilled the purpose of this investigation. The Cacao Syrup and the cinnamon syrup (special) seemed to mask and

(*Continued on page 450*)

FORMULATION OF A SOLUBLE TABLET

By William H. Ray† and H. George DeKay‡

The authors believe that the Carbowaxes may provide an answer to this perplexing problem.

THE development of a soluble tablet that could be produced on a production scale would be a great stride forward in the field of tablet manufacture. The greatest difficulty encountered in preparing a soluble tablet is the question of a soluble lubricating agent. Considerable work has been done in the search for an agent of this type and several materials have been suggested. Boric acid was the first substance used (1–5). Glyceryl triacetate was suggested (6) and Carbowax[a] 4000 (7) was also used as a soluble lubricant.

The purpose of this work is to attempt to formulate a soluble tablet, with the specific objective of making suitable hypodermic tablets on a tablet machine.

Experimental

Seven basic granulation formulas were used and granulated with two different granulating solutions. Twenty- and thirty-mesh granules were made with most of the formulas. Table I shows the granulation formulas used.

(Continued on page 456)

Presented before the Section on Practical Pharmacy, A.PH.A. Convention, Buffalo, N.Y., August, 1951.

† Present address Burroughs Wellcome & Company, Tuckahoe, N.Y.

‡ Professor of Pharmacy Purdue University, Lafayette, Ind.

[a] Trade mark of Carbide & Carbon Corp.

TABLE I.—GRANULATION FORMULAS

Granulation	Lactose, %	Dextrose, %	NaCl, %	Dilute Alcohol, Cc.,[a]	Glucose Solution, Cc. 2% Liquid[a]	Granule Size No.
Lactose	100	..	..	...	100	20
Isotonic No. 1	50	30	20	125	62.5	20 and 30
Isotonic No. 2	...	84	16	105	...	20 and 30
Isotonic No. 3	20	64	16	112.5	50	20 and 30
Isotonic No. 4	80	..	20	85	47.5	20 and 30
Isotonic No. 5	14	70	16	100	...	20 and 30
Isotonic No. 6	64	20	16	112.5	...	20

[a] Amount of granulating agent for 500 grams of formula.

TO THE PHARMACISTS OF AMERICA

THE AMERICAN PHARMACEUTICAL ASSOCIATION epitomizes the hopes and aspirations of those who look upon pharmacy as their profession. Whether you are a member of the A.PH.A. or not, our organization works for you just as it does for the public, twenty-four hours a day. Whatever we do at our headquarters in Washington, be it laboratory work, editorial work, professional relations activities, or contact with the hundreds of agencies and individuals who need the support and counsel of pharmacists, it redounds to your credit.

At Salt Lake City, Utah, in the week of August 16, we will meet to renew our personal contacts with each other, to determine policies and plans for the future, and to decide on ways and means to improve our services to the professions and to humanity.

We extend to all pharmacists and friends of pharmacy a most cordial invitation to join us in the serious business that lies ahead and in the social affairs which have been so generously provided by our hosts at the crossroads of the west.

R. Q. RICHARDS, *President*
American Pharmaceutical Association

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Welcome to Salt Lake City

ON BEHALF of the Local Committee of the one-hundredth convention of the AMERICAN PHARMACEUTICAL ASSOCIATION, we welcome you to Salt Lake City. A glance at these pages will show you how thoroughly we have organized to prepare for your comfort and entertainment. We realize that those who attend the meetings of the AMERICAN PHARMACEUTICAL ASSOCIATION and its related and affiliated groups make use of their time principally to further the professional status of American pharmacy. However, we know that you have chosen Salt Lake City for this one-hundredth convention not merely to work, but also to enjoy the scenic wonders of this area and to bring to the people of Utah some of the inspiration which has kept the AMERICAN PHARMACEUTICAL ASSOCIATION in its high place professionally for the past century.

May we assure you that every effort is being made by the undersigned committee officers and their many co-workers whose names appear on these two pages to make this your outstanding convention in point of over-all interest.

We are sure you will bring to us a lasting impression of the good that comes out of meeting with those who help to create the things that make American pharmacy great. We hope in turn to provide for you a week of endeavor for pharmacy in an atmosphere that will be conducive to the formation of permanent friendships and appreciation of what organization really means to those who enjoy working with their fellow men.

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To the Ladies

CONVENTION days are almost here again, and this year you will not want to miss a single day because we have planned a real fun week for you. Of course we can't give away all of our secrets, but the people of Utah are determined to do all in their power to make this a memorable vacation for each of you.

As an added incentive for you to be here for the opening session, we have secured the famed Tabernacle Choir with Richard L. Evans for our Sunday Evening Hour on Temple Square.

"Orchids on the Roof" is the theme for our Monday luncheon and fashion show atop Hotel Utah. You will especially want to attend the pioneer breakfast on Tuesday as this will be an unusual as well as a gala occasion. Another thrill is in store on Wednesday when we will go to the Country Club for a luncheon and book review. You'll be delighted with the novel favors!

Thursday is free for shopping and the theatre, but the banquet is that evening with very special entertainment. As a climax to a wonderful week together, we will have some beautiful sightseeing on Friday so you can be sure that we are going to have a marvelous time together.

Don't worry about not being housed at the headquarters as we are maintaining a lounge at the Hotel Utah for the convenience of all the ladies. You will find your friends there and be most comfortable, I am sure.

We'll be seeing you soon—plan to come early and stay late in the beautiful valley of Salt Lake. If you stay home you'll be sorry, and don't say that I didn't warn you.

JANET HINER,
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Charles E. Wertz, *Sub-Com. Transportation*
Alf Dalton, *Sub-Com-Transportation*

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o Shoot Real Bullets
Youth Play Death Games In 'Hot-Rods'
'Chicken' Stunt Perils All Drivers
In N. J. Gun Acci
ATLANTIC CITY, Nov. 23.—Seven-year-old
accidentally shot himself in the right cheek at his
Pleasantville early today and was admitted to
pital.
The shooting was the third involv-
ing children in South Jersey in the
last 48 hours.
BOY SHOT IN EYE
r Shot 4 Times, d by Hitchhiker
est Coat for Slaying Clue
Minister Beaten By 2 Hitchhikers
Co-Ed Strangled After Iowa Party, Escort Arrested
Bar Raide 13 Young
Policewomen
Cafe in Juniata
Fiancee Stabbed
Carol Lifshine, 17,
Cafe Man's Home Robbed of $1100
Student Accused Of Hitting Teacher
Besieged Gunman Shoots Three Men
New Sex Laws Den By Grand
Extradition Asked
Woman Is Found Slain in Schoolyard
Girl, 12 Self Pla Gun Ro
Companion Shooting in In South Jer
Three Boys Seized In Store Robbery
Youths V In 'Minor'
Police Seek Kin in Killing
Trial for Life
Subway Crime Wa
Hold Up Cabbie, to Drive Them 1 Mi.
eaten and Robbed gs in Germantown
Woman Is Robbed 19th and Spruce
Robber Kicks Man Senseless
Breaks His Ribs in
4 Held at Provide In Broad St. Hol
Victim's Relative Accused as 'Br
Behind Robbery of
Seek Cause of Chase In Which

PHARMACY CAN HELP COMBAT

Juvenile Delinquency

A MAJOR NATIONAL PROBLEM

By Dr. Martha M. Eliot

As in matters of community health, so in social problems, the community pharmacy is ready to work with those who are engaged in combating the growth of delinquency among our young people. Dr. Eliot here points out some of the areas of social betterment in which the pharmacist can assist.

"THERE'S nothing shaking around here." The speaker was a lad of certain, yet uncertain age. He certainly wasn't grown up, but the down on his upper lip, the alternating pitch of his changing voice, could have put his years anywhere between 14 and 16.

His mournfulness over a lack of anything to do was shared by his companion, equally youthful, as they looked into the show window of the community pharmacy which was currently displaying a map of the world showing sources of drugs from all sorts of interesting places.

Where to go—what to do—whom to meet—these are questions which are asked and answered, or not answered, uncounted times in drug stores over the country. For the drug store is a meeting place, a social climate, particularly for teen-agers.

And what pharmacist has not heard the lament of these young people, when there is nothing to do; and their excited planning when action is afoot?

He knows what the young people in his community are interested in; is familiar with their "slang"; knows their haunts. He knows, too, if they don't have enough places to foregather, if the community hasn't given them the opportunities they should have for a variety of forms of recreation.

Certainly the pharmacist, whether he has children of his own or not, wants the young people in his community to grow up in surroundings which will keep them physically and emotionally healthy.

That some of our young people are not growing into physically and emotionally stable adults is evidenced by the rise in juvenile delinquency which has been apparent in this time of international unrest.

The number of child delinquents appearing before a representative sampling of courts over the country increased an average of 17 per cent between 1948 and 1951. Less densely populated areas of the country seem to be experiencing even sharper increases than this 17 per cent average. The number of children picked up by the police for misbehavior is now about a million a year.

Census figures show us that by 1960, there will be 42 per cent more children between 10 and 17 than there were in 1951. Will the number of delinquent children also increase 42 per cent by 1960?

(Continued on next page)

Continued from Preceding Page

More than half the adult criminals in this country have a past history of juvenile delinquency. Each year, one authority says, the United States pays a 15 billion dollar bill for the total cost of crime. Obviously, we as a Nation have not done all we can to get at the best way of treating and preventing juvenile delinquency.

At the Children's Bureau, we have become so concerned at the situation that we have organized a campaign to get at the facts of juvenile delinquency, its prevention and treatment; with the help of experts around the country to set forth new statements of desirable practices in the care of delinquent children; to arouse the public to find out what is happening to delinquent children in local communities, and to take steps to improve the practices that are not up to standard.

Another of our goals is to encourage local, state, and national agencies which deal with the problem to work in closer cooperation with each other.

A special Juvenile Delinquency Project, financed by private contributions for this purpose to the Child Welfare League of America, has come into being and is giving strong impetus to the objectives of this campaign.

Though this special campaign and project are putting emphasis on improving the care and treatment of delinquent children, attention must also be constantly directed toward measures of preventing delinquency. The regular on-going community programs of child welfare, child health, education and recreation, and child guidance are basic to the whole program of prevention of delinquency and to the treatment of children who commit delinquent acts. As the treatment aspects of the juvenile delinquency problem are highlighted, the preventive work with young children in communities, and their families, must be increasingly stressed.

Implicit in this campaign is the need for citizens and community leaders—and certainly the pharmacist may be a community leader—to share in the responsibility for supporting good community programs, for finding out how much of a local problem juvenile delinquency is; for stirring action to fill in the gaps which presently represent failures in providing essential activities for and services to growing youngsters.

The Children's Bureau has issued a series of three pamphlets which can help citizens and community groups in gauging the extent of juvenile delinquency in their own towns. These pamphlets are entitled "Some Facts About Juvenile Delinquency," "Helping Delinquent Children," and "What's Happening to Delinquent Children in Your Town?"

There is another major side, also, to our campaign. The Children's Bureau staff members are working with many experts and representatives of national professional groups which deal with children in a variety of ways once they have reached the hands of the police and juvenile court. We are attempting, with this expert help, to prepare a statement setting forth some standards for training schools—no such statement of standards has ever existed; and to bring up-to-date the standards for juvenile courts which were prepared in 1923 under the joint auspices of our Bureau and the National Probation and Parole Association. Similarly, a statement of guides to practice for juvenile police is in process of preparation.

We are attempting, throughout the campaign, to focus our efforts on these major fronts:

1. Getting officers who have special training and aptitude to work with children in all police departments (one or more officers depending on the size of the town). A recent study of 177 cities all having populations of more than 25,000 showed that almost half have no special units or bureaus in their police departments staffed with officers trained in handling children's problems.

2. Getting children out of jail and into good detention facilities or appropriate foster family care when they cannot be returned home by the police while awaiting court action. Studies show that 100,000 children are confined in jails designed for adults each year. We have only 174 special

detention homes in the United States in which children can be held in custody, yet there are more than 2,500 courts in the country that handle juvenile delinquents.

3. Getting good staffs to help the juvenile court judge in his work. In more than half the counties in the United States, juvenile court judges have no help from probation officers. Yet we know that a juvenile court judge needs the help of a well-trained probation officer for the study of the child, which will aid the court in understanding the child's delinquency and provide the supervision that he may need following the court's action.

4. Getting the kind of services in every training school for each delinquent child which will make his stay a constructive experience.

These are big goals, but tremendously important ones. They require and deserve public support.

Many groups in many communities have been working on their delinquency problem for many years. With them it's not a part-time job. They keep working at it because they know that the risks of a child becoming delinquent are great if the community fails to maintain services that will support family life and thus ensure the healthy development of its children.

These groups know that the best way to deal with juvenile delinquency is to prevent it.

But the agencies that deal with children now are working with too small staffs for the number of children and youth within their care. They are having a hard time giving boys and girls the treatment they require and they will continue to have a hard time doing their jobs unless they are strengthened, through public awareness of their heavy responsibilities, and given the money and personnel to do the job.

"Un-making" delinquency can be a complicated process—as complex as the way in which the delinquency came about. Treatment must be based on a child's individual needs. One child may simply need to be brought into a baseball club in his neighborhood or have someone show an interest in his school work. Another child may be so deeply involved in a personality conflict with his family and his home environment that only a period of long and intensive individual treatment will help him make social and personal adjustments.

As pharmacists you are certainly aware of the danger of entrusting the formulation of prescriptions to amateurs. Drugs are useful but powerful, and carry with them the potential of danger if not handled with knowledge.

Children are infinitely more complex than all the drugs in the world, and certainly entitled to the best-trained, most thoughtful kind of help when they edge toward the danger of emotional disturbance.

Until this kind of professional help is forthcoming, and until many forces in each community join together and pledge the support that is needed, the problem of juvenile delinquency will not be squarely met.

It is up to citizens everywhere to make it their job to be informed of how well the needs of children are being met. They are the ones who can close gaps in service, through their state and local governments, to insure as far as possible to every child the chance to develop his full potential for useful citizenship and happy living.

Pharmacists, particularly, have the unusual chance to see danger signals early in the behavior of teen-agers who come to the drug store. Your awareness of what services and opportunities there are in communities to give these youngsters a helping hand before they get into trouble will be of great importance in the whole program, and do much to keep delinquency at a minimum.

For the pharmacist sees not only the danger signals indicating emotional disturbance but, unfortunately, also what happens to youngsters whose disturbed condition is ignored. If your community doesn't have activities and opportunities which it needs for its young people, you are in an advantageous position to seek out those individuals and organizations which want to improve and extend these services, and support them in their task.

FROM THE SECRETARY'S DIARY FOR JUNE, 1953

1st An early morning meeting at the Statler in New York with Council Chairman Little, President Richards, and Treasurer Schaefer, who, with House of Delegates Chairman Josey, constitute the Executive Committee of the Council of the A.PH.A. Decisions on Convention, publications, and other ASSOCIATION business were reached in time to permit President Richards and the Secretary to hurry to the A.M.A. House of Delegates meeting, where President Richards briefly addressed the House, bringing the greetings of the A.PH.A. Now a visit to the A.M.A. Convention exhibits at the Grand Central Palace and later discussing interprofessional problems with President Bauer and Editor Austin Smith of the A.M.A. Back to Washington in the late evening.

6th A morning conference with Colonels Black and Roth of the Army Medical Service Corps on problems relating to pharmacy in the Army. The pending legislation to increase the number of colonels in the Medical Service Corps seems to be moving forward.

11th Today in Albany, N.Y., addressing the graduating classes of the Union University, Albany College of Pharmacy at their Commencement, and in the evening speaking to the assembled alumni of the College who turned out 500 strong for their annual reunion and welcome to the graduating class. That Dean Francis O'Brien is doing splendid work in this area is apparent when one hears the favorable comment on all sides. Late in the evening on the way to Chicago.

12th Busy in the afternoon at the Palmer House discussing pending Convention programs with Pat Costello and others. Now off on the "City of Los Angeles" for the West Coast and glad to meet Walter Frazier on the train, also bound for the Hospital Pharmacy Institute at L.A.

13th These streamliners give very little opportunity for a stretch at such important places as Cheyenne and Green River, Wyo., but such as it is, it is welcome. Leaving this train at 7:30 p.m. to meet the Salt Lake City Convention Committee and settling many pending problems in the well-appointed lounge and office in Jack Heinz' new pharmacy, before hustling away on the 10:30 p.m. train for Los Angeles.

15th This morning joining other members of the faculty and members of the Ninth Hospital Pharmacy Institute at Loyola University located on a hilltop overlooking much of L.A. Speaking on the Philosophy of Hospital Pharmacy Services and also joining in the panel discussion on professional problems, which took up a good part of the afternoon session.

16th This evening addressing the Greater Los Angeles Branch of the A.PH.A. which was host to the graduating class of the College of Pharmacy of USC and now off on the "Lark" for San Francisco.

17th All this day in San Francisco with most of the time spent on a mission for the Surgeon General of the Army at Letterman Hospital, where Major John F. Lodato heads the Pharmacy Section and Lt. J. E. Thomley and non-commissioned pharmacists furnish pharmaceutical services for this extensive military hospital. In the afternoon a session with Dean Daniels at the University of California Medical Center and then to Oakland for the trip East, with a pleasant half hour spent with Louis Fischl who came to the station to chat and see us off.

19th Arriving about four hours late in Chicago because of a 35-car freight wreck in Wyoming, and thus many an appointment unavoidably canceled, but still able to talk with many people over the telephone before the week-end.

20th A busy day in session with the A.C.P.E. passing on the status of many schools recently inspected and determining accreditation policies. Departing in the mid-afternoon for Boston.

21st Much of this day at Swampscott, Mass., where the Massachusetts Pharmaceutical Association is assembling for its annual convention, and welcomed the opportunity to discuss with Messers Adamo, Silverman, Cusick, Newton, Chagnon, and Kelley the plans for the 1954 Convention, which may be held in Boston. With Ray and Mrs. Kelley, back to Boston and then on the Federal Express to Washington.

27th Today a meeting of Friends of Historical Pharmacy which operates the Hugh Mercer Apothecary Shop in Fredericksburg. A.PH.A. President-Elect F. Royce Franzoni was elected president of this organization for the ensuing year.

29th A conference with interested groups called together by Surgeon-General Leonard Scheele of the Public Health Service to decide upon the next steps for handling the generic name problem arising from hasty action of the WHO pharmacopeial experts in promulgating lists of standard names for drugs.

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Chemical Warfare Against Civilians Is Possible

Speaking as a member of a panel on Civil Defense at the convention of the American Medical Association in New York, June 2, James H. Defandorf, Ph.D., stated that nerve and mustard gases are the most likely to be used against the civilian population of the United States in the event of war. "The respiratory system is particularly vulnerable to the action of the nerve gases, which, by attacking a protective enzyme system of the body, are toxic in concentrations so small that they offer a real threat to the densely populated areas of this country," he said. The persistent action of the mustard gases makes their long-scale employment a possibility also.

Dr. Defandorf, consultant in biological warfare for the FCDA, reported that investigation is now going forward in an effort to develop suitable protective masks for the citizens in critical target areas.

FCDA to Stockpile Less Blood Plasma, More Plasma Volume Expanders

Early in June the FCDA shifted the make-up of its stockpile goal of 7,500,000 shock treatment units, cutting blood plasma or other blood derivatives from 50 to 25 per cent of the whole, and increasing plasma volume expanders from 50 to 75 per cent. FCDA emphasized, however, that even this 25 per cent goal for blood plasma has not yet been reached, and urged more blood donations from the people. The change in the structure of the stockpile is the result of satisfactory completion of field experience with expanders.

Toward its goal of 2,000,000 units of blood plasma or blood derivatives, FCDA now has 1,225,000 units, and hopes to reach its goal by June 30, 1954. At present, the stockpile holds 1,300,000 units of plasma volume expanders. FCDA hopes to reach its first goal of 2,100,000 units by June 30, 1954, and later to bring the stockpile of expanders to 5,500,000 units. The ultimate goal of 7,500,000 units is estimated to be sufficient to handle 5,000,000 casualties, which would result, it is believed, from a mass atomic attack on the United States.

FCDA Announces Reorganization of Headquarters

Following changes in its regional organization structure, announced in the last issue of THIS JOURNAL, FCDA has now made a comprehensive adjustment in its headquarters division in Washington. According to Governor Val Peterson, FCDA Administrator, the new plan streamlines the organization to better meet its peacetime and wartime responsibilities.

The new plan gives primary interest to providing leadership, technical guidance, and material support to the States and Territories. New major staff divisions and their functions are as follows:

Education Services will be responsible for alerting the public, stimulating volunteer participation, and recommending teaching techniques. Mrs. Katherine G. Howard, assistant administrator of FCDA, will also direct this division.

Operations Control Services will establish federal control facilities covering warnings, communications, transportation, supply, and over-all tactical planning, as well as assisting in the development of state and local control. This division is headed by Assistant Administrator Ernest Hall.

Technical Advisory Services, directed by Assistant Administrator Gerald G. Gallagher, is slated to provide guidance in the development of state and local technical plans, designs, training manuals, manpower, and medical requirements.

General Administration Staff will supervise budgetary and fiscal operations, as well as other internal affairs of the FCDA. William N. Rehlaender heads this division.

Planning Staff will coordinate FCDA activities with those of other Federal agencies, NATO, and the National Security Council. In addition, this division, under the supervision of Colonel Justice M. Chambers, will be responsible for developing the national civil defense program.

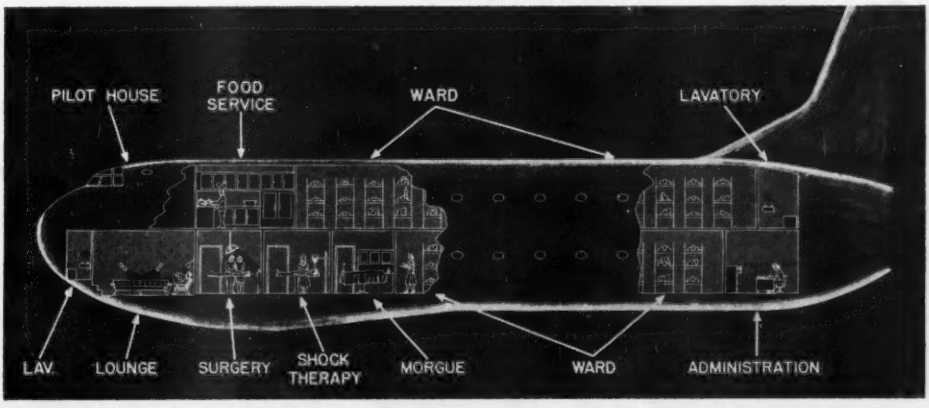
General Counsel, under the new organizational plan, will continue to advise the Administrator on all legal matters affecting civil defense. Acting General Counsel is Edwin J. Clapp, Jr.

New Manual on Emergency Medical Treatment Issued

FCDA has recently published a 69-page book, *Emergency Medical Treatment*, for use by pharmacists, physicians, and other civil defense casualty services personnel. It represents the combined efforts of the Subcommittee on Shock, the Subcommittee on Burns, and the Committee on Surgery of the National Research Council, the Division of Biology and Medicine of the Atomic Energy Commission, and FCDA. Copies are on sale for 25 cents each by the Superintendent of Documents, Washington 25, D.C. It is being distributed to regional, state, and local civil defense medical officers.

Aerial Hospital Proposed

Drs. M. S. White and Robert W. Merkle of Langley Air Force Base, Va., suggested the development of an aerial hospital in an address before the Section on Military Medicine, American Medical Association, at the June convention of the A.M.A. in New York. A cross-section of their design is shown below. Such an aerial hospital of 100 beds would permit practically all wounded to be returned immediately to the United States, instead of the necessity for transfer to hospital ships, as under present facilities. The huge Globemaster airliners would reduce the cost of extra medical care at every front, they contended. Moreover, since aircraft would bring any battlefront within brief travel time from United States continental hospitals, "existing health facilities, civil as well as government, would be built and planned in peace for the loads of war."



Cross section sketch of an aerial hospital, utilizing a large Globemaster transport. New concept of Military Medicine was discussed at A.M.A. convention. For more details, see right column, above.

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During the summer months many of your customers depend on CALADRYL to bring cooling, soothing relief from the burning and itching of light sunburn, prickly heat, and diaper and cosmetic rashes.

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THE ASSOCIATION EXTENDS A CORDIAL WELCOME TO THE FOLLOWING MEN AND WOMEN WHO WERE ACCEPTED FOR ACTIVE MEMBERSHIP DURING THE MONTH PRECEDING PREPARATION OF THIS ISSUE.

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Cano, Miguel R., Tucson
Clevenger, Arthur A., McNary
MacAlpine, Fred C., Phoenix
Openshaw, Walter, Phoenix

ARKANSAS

Baker, Forrest L., Clinton

CALIFORNIA

Baird, George Q., Los Angeles
Henderson, Stuart B., Arcadia
Kusserow, Gerhard W., Santa Monica
Neggo, Ilse A., Los Angeles

CONNECTICUT

Benson, Earl S., Fairfield

DISTRICT OF COLUMBIA

Reimers, Harriette

FLORIDA

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Pettijohn, Clyde H, Winter Haven
Suttel, G. Richard, West Palm Beach

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Wray, Louise, Royston
Yarbrough, Walter, Columbus

ILLINOIS

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Ferrara, Andria, Chicago
Ishida, D., Chicago
Moore, C. Ray, Chicago

INDIANA

Stephens, William L., Frankfort

LOUISIANA

Kyer, Cook, Baton Rouge

MASSACHUSETTS

Ventura, Josephine, Lawrence

MICHIGAN

Belding, Earnie L. G., Royal Oak
Derbabian, O. John, Detroit

MINNESOTA

Stebbins, W. N., Minneapolis

MISSOURI

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NEBRASKA

Manchester, Barbara C., Lincoln

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Matthews, Annette P., Schenectady
Phillips, Stanley, Forrest Hills
Stancampiano, Josephine A., Schenectady
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Conwell, Verne C., Milwaukie
Dunn, Lowell P, Klamath Falls
Griffith, H. Lawrence, Portland
Juhnke, Frank F., Portland
Peterson, Fred L., Portland
Randles, Thomas J., Portland
Smith, R. Dean, Portland
Watson, George D., Portland
Watson, Wallace L., Portland
Watt, Gordon R., Portland
Wilson, Glen W., Oswego

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Busis, David, Pittsburgh
Levin, Lester L., Philadelphia
Saluck, Leonard, Philadelphia
Smith, Winfield S., Jr., Carnegie
Wallace, R. E, Pittsburgh

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Reed, G. Irving, Salt Lake City
Ricks, Norman H., Salt Lake City

VIRGINIA

Holland, Emily G., Vienna

WISCONSIN

Berg, George J., Milwaukee
Cleary, Robert J, Superior
Epstein, William, Milwaukee
Gwidt, Leo T., Stevens Point
Haugen, Arthur C., Superior
Hayes, James P., Elkhorn
Hurley, George E., Milwaukee
King, Victor H., Elkhorn
Letven, Milton M., Kenosha
Murray, Raymond F., Foxboro
Nourse, Glenel H., Milwaukee
Stone, Richard, Solon Springs

POSSESSIONS

de la Gandara, Orlando, Habana, Cuba
Santi, Oscar, Ponce, P.R.

CANADA

Lorenz, Walter K, Valleyfield, Quebec
Morch, Slava, Montreal

FOREIGN

Bjarner, Anders A., Guayaquil, Ecuador, S.A.
Midy, Pierre, Paris, France

Deceased Members

DiMaggio, Gregory, Bloomfield, N.J., Mar. 16, 1953
Droelle, Orlin, Detroit, Mich.
Dwyer, John H., Syracuse, N.Y., Apr. 11, 1953
Kato, Zenichi, Seattle, Wash.
Lynn, Frank E., Utica, Ohio, Apr. 2, 1953
McCarthy, Charles D., Geneva, N.Y.
Norgard, Myron, Paramount, Calif.
Penick, S. Barksdale, New York City, May 24, 1953 (Life Member)
Sister Clarita Decker, Pittsburgh, Pa., Feb., 12, 1952
Stone, Louis, Detroit, Mich.
Vanek, Otto, Cicero, Ill.

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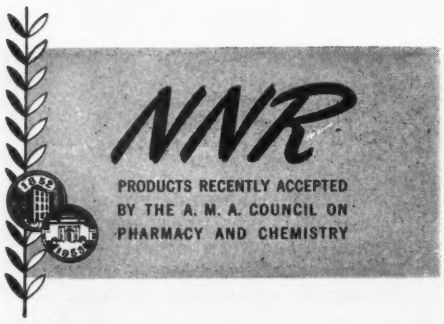
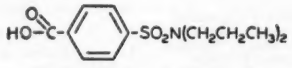


PROBENECID.—Benemid (Sharp & Dohme).—$C_{13}H_{19}NO_4S$.—M. W. 285.36.—*p*-(Dipropylsulfamyl)benzoic acid.—The structural formula of probenecid may be represented as follows:



Actions and Uses.—Probenecid, through a reversible action, interferes with the enzymatic metabolism and inhibits the renal tubular excretion of certain organic compounds such as penicillin, *p*-aminosalicylic acid, and phenolsulfonphthalein. It also acts as a urate eliminant by depressing the renal tubular resorption of urate, thus increasing the urinary excretion and reducing the serum level of uric acid. Probenecid is therefore useful as an adjuvant to intensive therapy with penicillin or *p*-aminosalicylic acid to increase and prolong the plasma concentrations of these anti-infective agents, and as an agent to promote the elimination of uric acid in the interval treatment of chronic gout. Its suppression of the renal clearance of phenolsulfonphthalein (phenol red) is of significance in the application of that kidney excretion test as a clinical guide to the effectiveness of probenecid. Analytic methods are also available for determination of probenecid metabolites in the body fluids.

Probenecid plasma levels of 2 to 10 mg. per 100 cc. have been correlated with effective plasma levels of penicillin and of *p*-aminosalicylic acid. Probenecid is capable of producing a twofold to fourfold increase in plasma levels of penicillin or *p*-aminosalicylic acid. Therefore it can be used to increase the effectiveness of orally administered penicillin and to reduce the dose required for adequate therapy by either the oral or intramuscular route. It may enhance the effectiveness of *p*-aminosalicylic acid in tuberculosis by increasing its plasma level above the usual limits attainable with oral administration without causing gastric distress.

The reabsorption of glucose, arginine, urea, or creatinine from the urine is not influenced by probenecid, nor does it affect the excretion of streptomycin, chloramphenicol, aureomycin, or terramycin. It raises the plasma concentration of the presumably biologically inactive conjugated sulfonamides, but the insignificant increase it produces in the free sulfonamide level is considered to be therapeutically inconsequential. However, whenever sulfonamides are administered in conjunction with probenecid, the sulfonamide plasma concentration should be regularly determined to avoid the possible development of toxic sulfonamide levels.

Probenecid may precipitate an acute attack of gouty arthritis when used as a urate eliminant in chronic gout. Also, by retarding the urinary reabsorption of urates, the possibility must be entertained that probenecid may favor the formation of uric acid stones from urates that would tend to crystallize in an acid urine. Colchicine should be administered without discontinuing probenecid to manage acute attacks of gout, and the precipitation of urates can be minimized by maintaining the urine alkaline to litmus. *Salicylates should not be administered in conjunction with probenecid because the therapeutic actions of the two drugs are antagonistic.* Probenecid has no analgesic action and is of no value in the treatment of acute gout. Serious anaphylactoid reactions are extremely rare; only one case has been noted to date.

Probenecid is rapidly absorbed into the blood stream following oral administration and is promptly eliminated by glomerular filtration. However, its reabsorption by the renal tubules is so great that the renal clearance cannot be estimated because little or none appears in the urine. It is metabolized slowly and its metabolic products are only slowly excreted in the urine. Following a single oral dose, a determinable and functionally useful plasma concentration persists in the dog for longer than 44 hours. A high therapeutic index has been demonstrated in a variety of laboratory animals. Although probenecid is well tolerated in man and is of low toxicity at useful dosages, occasionally patients may experience nausea. This may be overcome by reduction of the daily dosage. Rarely, sensitivity may be manifested by the appearance of a skin rash, but such reactions have been observed much

less frequently following therapy with probenecid than following the administration of antibiotics. If a rash appears, therapy with probenecid should be discontinued until the cause of the reaction can be determined.

Probenecid obviously will serve no useful purpose in elevating the plasma concentrations of penicillin in the presence of known renal impairment. When there is glomerular involvement, its rapid accumulation in the plasma may cause nausea or other toxic symptoms. Even in the presence of renal damage, probenecid does not exhibit toxic action on the kidney.

Dosage.—Probenecid is administered orally. As an adjuvant to penicillin therapy of severe infections such as subacute bacterial endocarditis and staphylococcic osteomyelitis, the total daily dosage in absence of renal disease is 2 Gm. given in four divided doses. The dose should be reduced for older persons in whom renal impairment is more likely to be present. When impairment is sufficient to retard the tubular excretion of penicillin, probenecid is not necessary and may not be tolerated. When used in conjunction with penicillin therapy of children, the daily dosage of probenecid is calculated on the basis of 0.01 Gm. to 0.025 Gm. per kilogram of body weight (ranging from 0.25 Gm. to 1 Gm.). The dosage of of probenecid when used with *p*-aminosalicylic acid is similar and subject to the same precautions. The phenolsulfonphthalein (phenol red) excretion test employed by the intravenous (15-minute) method can be used as an index of effective plasma concentrations of probenecid. The renal clearance of phenol red is reduced to approximately one-fifth of the normal rate with adequate probenecid dosage.

As a urate eliminant in chronic gout, a daily single dose of 0.5 Gm. is recommended for one week, then increased to 1 Gm. daily in two divided doses. This is usually adequate as a maintenance dose because renal impairment is common in patients with gout. However, for some patients it may be desirable to increase the total daily dosage to 2 Gm., given in four divided doses, to obtain optimal excretion of uric acid. The urine can be maintained alkaline to litmus with doses of 5 to 7.5 Gm. of sodium bicarbonate or potassium citrate, and the patient's acid-base balance should be checked regularly to avoid systemic alkalosis.

Tests and Standards—

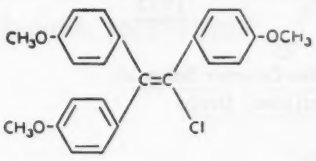
Physical Properties: Probenecid is a white, odorless crystalline powder which melts between 198 and 200°. It is soluble in acetone, alcohol, dilute alkalis, and dilute sodium bicarbonate; and insoluble in dilute acids and water.

[See *J.A.M.A.* **151:** 299 (Jan. 24, 1953).]

Sharp & Dohme, Inc., West Point, Pa.

Tablets Benemid: 0.5 Gm. U. S. patent 2,608,507.

CHLOROTRIANISENE.—TACE (Merrell).—Chlorotris(*p*-methoxyphenyl)ethylene.—Tri-*p*-anisylchloroethylene.—$C_{23}H_{21}ClO_3$.—M. W. 380.86.—The structural formula of chlorotrianisene may be represented as follows:



Actions and Uses.—Chlorotrianisene in general shares the actions and uses of the estrogens. However, it possesses certain peculiar attributes not common to other estrogens. When administered orally, the amount of estrogenic activity recovered in the stool exceeds the amount originally administered in the form of chlorotrianisene. This indicates that by some metabolic process the potency of the drug is enhanced. The compound is stored in the body fat from which it is slowly released over a period of time, varying with the amount administered. Therefore, its action will persist for varying periods following discontinuance of the drug. Its use in high dosages in mammary cancer occurring five years or more past the menopause is not recommended because of uterine bleeding, although there is less tendency toward withdrawal bleeding in the lower dosage recommended for the menopause.

Dosage.—Chlorotrianisene has a lower milligram equivalent than other synthetic estrogens and doses are higher for comparable effects. The average dose for relief of menopausal symptoms varies between 12 and 24 mg. daily by mouth. In prostatic cancer, 24 mg. daily has proved effective in relieving symptoms.

Tests and Standards—

Physical Properties: Chlorotrianisene is a white, odorless, crystalline powder, m. p. 114–117° (becomes syrupy at about 108°). It is freely soluble in acetone, benzene, and chloroform; and very slightly soluble in water. The amounts which dissolve in the following solvents to form 100 ml. of solution are: 0.28 Gm. in alcohol and 3.6 Gm. in ether.

[For more information regarding tests and standards and for dosage forms see *J. A. M. A.*, **151:** 43 (Jan. 3, 1953).]

The Wm. S. Merrell Company, Cincinnati, Ohio.

Capsules Tace: 12 mg. in corn oil. U. S. Patent 2,430,891.

LEGAL ACTIONS OF THE

U.S. Food and Drug Administration

COURT JUDGMENTS JULY, 1952–APRIL, 1953

Over-The-Counter Sales of Prescription Drugs

July, 1952:

New Orleans, La. Sold amphetamines without physicians' prescriptions. 1 defendant fined $300.

September, 1952:

Paris, Ill. Sold amphetamines, barbiturates, diethylstilbestrol, and thyroid without physicians' prescriptions. 1 defendant fined $750 and court costs.

Paris, Ill. Sold amphetamines, barbiturates, stilbestrol, Metandren, and thyroid without physicians' prescriptions. 3 defendants: owner fined $800 and half the costs; other 2 defendants each fined $100 and one-quarter of the costs; total fine $1,000 and court costs.

October, 1952:

Denver, Colo. Sold amphetamines, barbiturates, and testosterone without physicians' prescriptions. 2 defendants: firm fined $1,000; individual fined $1,000 and placed on probation for four years; total fine $2,000.

Denver, Colo. Refilled prescriptions for amphetamines and barbiturates without physicians' authorizations. 1 defendant fined $1,000 and placed on probation for five years.

Laurel, Miss. Sold and refilled prescriptions for amphetamines and barbiturates without physicians' authorizations. 3 defendants fined $50 each; total fine $150.

Omaha, Nebr. Sold and refilled prescriptions for amphetamines, barbiturates, and triple sulfa without physicians' authorizations. 2 defendants: one fined $1,500; the other fined $500; both defendants were assessed court costs and placed on probation for three years; total fine $2,000 and court costs.

Omaha, Nebr. Sold and refilled prescriptions for amphetamines, barbiturates, and Savatan without physicians' authorizations. 2 defendants: one fined $1,000; the other fined $250; both defendants were assessed court costs and placed on probation for three years; total fine $1,250 and court costs.

Omaha, Nebr. Sold and refilled prescriptions for amphetamines and barbiturates without physicians' authorizations. 3 defendants: one defendant fined $1,000 and court costs; the two other defendants fined $500 each and court costs; total fine $2,000 and court costs.

November, 1952:

Kansas City, Mo. Sold amphetamines, barbiturates, and Metandren without physicians' prescriptions. 2 defendants: firm fined $750; individual given a 90-day jail sentence; total fine $750.

Ardmore, Okla. Sold amphetamines, barbiturates, Ergoapiol, and Metandren without physicians' prescriptions. 2 defendants: owner fined $300; other defendant fined $50; total fine $350.

Lawton, Okla. Sold amphetamines, barbiturates, thyroid, and Metandren without physicians' prescriptions. 3 defendants: firm fined $240; one defendant fined $15 and the other, $45; total fine $300.

Lawton, Okla. Sold amphetamines, barbiturates, thyroid, Metandren, and Eskaphen B Elixir without physicians' prescriptions. 2 defendants: owner fined $220; other defendant fined $90; total fine $310.

Lawton, Okla. Sold amphetamines, barbiturates, and Metandren without physicians' prescriptions. 3 defendants: firm fined $200; one defendant fined $75, and the other, $45; total fine $320.

Lawton, Okla. Sold amphetamines, barbiturates, Metandren, and Eskaphen Elixir wthout physicians' prescriptions. 1 defendant (firm) fined $280.

Lawton, Okla. Sold amphetamines, Metandren, Nembutal and aspirin, Eskaphen B Elixir, and Donnatal Elixir without physicians' prescriptions. 1 defendant fined $120.

Lawton, Okla. Sold amphetamines, barbiturates, and Metandren without physicians' prescriptions. 2 defendants: owner fined $205; other defendant fined $60; total fine $265.

Madill, Okla. Sold amphetamines, barbiturates, Cafergone, apiol and ergot, thyroid, and Metandren without physicians' prescriptions. 1 defendant fined $600.

Houston, Tex. Sold amphetamines and barbiturates without physicians' prescriptions. 1 defendant fined $500, given a six-month suspended jail sentence, and placed on probation for five years; total fine $500.

December, 1952:

Washington, D. C. Sold amphetamines without physicians' presciptions. 1 defendant fined $1,000.

Augusta, Ga. Refilled prescriptions for barbiturates without physicians' authorizations. 3 defendants fined $50 each and placed on probation for two years; total fine $150.

Chillicothe, Ill. Sold amphetamines, sulfonamides, thyroid, and barbiturates without physicians' prescriptions. 1 defendant fined $500 and court costs; total fine $535.

Chillicothe, Ill. Sold amphetamines and hormones without physicians' prescriptions. 1 defendant fined $500 and court costs; total fine $535.

Joplin, Mo. Sold amphetamines, barbiturates, and hormones without physicians' prescriptions. 2 defendants: one fined $50; the other fined $150 and court costs; total fine $241.

Riverhead, N. Y. Sold barbiturates and sulfonamides without physicians' prescriptions. 2 defendants: firm fined $250; individual fined $750 and placed on probation for one year; total fine $1,000.

(Continued on page 448)

Why Obedrin ... for the obese patient?

Because Obedrin offers a practicable solution to the problem of keeping an obese patient on a restricted diet.

Because Thousands of enthusiastic physicians have found that Obedrin curbs the appetite without making the patient jittery and does not cause insomnia.

Because Obedrin contains enough vitamins to supplement the restricted diet. A large dose of vitamin C is included to help mobilize tissue fluids.

Because Obedrin contains *Pento*barbital, a short-acting barbiturate, as a corrective. Pentobarbital has approximately the same duration of action as methamphetamine, so the possibility of cumulative barbiturate effect is negligible.

Available: The 60-10-70 Diet.* This is a convenient, variable diet, with enough roughage to eliminate necessity of artificial bulk laxatives.

Write for Pads of daily Menus of the 60-10-70 Diet* and professional sample of Obedrin

Each Obedrin tablet contains:

Semoxydrine HCl	5 mg.
Methamphetamine HCl	
Pentobarbital	20 mg.
Ascorbic Acid	100 mg.
Thiamine HCl	0.5 mg.
Riboflavin	1 mg.
Niacin	5 mg.

THE S. E. MASSENGILL COMPANY • BRISTOL, TENN.

FDA Administration

• • • • • • • • • • • • • *from page 446*

Ardmore, Okla. Sold and refilled prescriptions for amphetamines and barbiturates without physicians' authorizations. 1 defendant fined $260.

Ardmore, Okla. Sold and refilled prescriptions for amphetamines and barbiturates without physicians' authorizations. 1 defendant fined $210.

Ardmore, Okla. Sold amphetamines, barbiturates, hormones, and thyroid without physicians' prescriptions. 1 defendant fined $350.

Ardmore, Okla. Sold amphetamines, barbiturates, and hormones without physicians' prescriptions. 1 defendant fined $350.

Houston, Tex. In March, 1951, defendant was fined $500, given a four-year suspended jail sentence, and placed on probation for five years for illegal sales of amphetamines and barbiturates. On December 19, 1952, probation was revoked and the defendant was given a six-month jail sentence for violating the probation.

January, 1953:

Washington, D. C. Peddled barbiturates on city streets. 1 defendant sentenced to pay $500 fine or serve 60 days in jail; committed to jail.

Indianapolis, Ind. Sold amphetamines, barbiturates, and sulfonamides without physicians' prescriptions. 2 defendants: each fined $200 and court costs of $21.50; total fine $443.

Des Moines, Iowa. Sold amphetamines and barbiturates without physicians' prescriptions. 1 defendant fined $600 and court costs; total fine $637.20.

Des Moines, Iowa. Sold amphetamines and barbiturates without physicians' prescriptions. 1 defendant fined $750 and court costs; total fine $787.20.

Independence, Kans. Sold and refilled prescriptions for barbiturates without physicians' authorizations. 1 defendant given a 60-day suspended jail sentence and placed on probation for 60 days; costs of $61 were assessed.

Minneapolis, Minn. Sold barbiturates without physicians' prescriptions. 2 defendants: firm fined $250; individual fined $50; total fine $300.

Miami, Okla. Sold amphetamines, barbiturates, and hormones without physicians' prescriptions. 1 defendant fined $500.

Pittsburgh, Pa. Sold hormones without physicians' prescriptions and refilled prescriptions for barbiturates and thyroid without physicians' authorizations. 1 defendant fined $200 and court costs and placed on probation for three years; total fine $237.20.

February, 1953:

Chicago, Ill. Sold sulfonamides without physicians' prescriptions. 3 defendants: firm and one individual fined $100 each; other individual fined $50, and court costs; total $292.20.

Chicago, Ill. Sold amphetamines, sulfonamides, and Ergotin-Aloe Compound pills and tablets without physicians' prescriptions. 3 defendants fined a total of $400 and court costs; total fine $442.40.

Baltimore, Md. Refilled prescriptions for barbiturates without physicians' authorizations. 2 defendants: firm and individual each fined $300, and court costs; total fine $655.

Boston, Mass. Sold amphetamines and barbiturates without physicians' prescriptions. 2 defendants fined $250 each; total fine $500.

Boston, Mass. Sold amphetamines and barbiturates without physicians' prescriptions. 1 defendant fined $500.

Beatrice, Nebr. Sold barbiturates and hormones without physicians' prescriptions. 1 defendant fined $150 and court costs; total fine $185.

Beatrice, Nebr. Sold amphetamines and barbiturates without physicians' prescriptions. 6 defendants: firm fined $135 and costs of $35; one individual fined $30; two individuals fined $20 each; two individuals fined $10 each; total fine $260.

Portsmouth, Ohio. Sold amphetamines and sulfonamides without physicians' prescriptions. 2 defendants: one individual fined $300; other individual fined $200; total fine $500.

March, 1953:

Concord, Calif. Refilled prescriptions for barbiturates without physicians' authorization. 3 defendants fined $200 each; total fine $600.

Los Angeles, Calif. Sold and refilled prescriptions for amphetamines, barbiturates, sulfonamides, and thyroid without physicians' authorizations. 2 defendants: one fined $400; the other fined $200; total fine $600.

Chicago, Ill. Sold amphetamines without physicians' prescriptions. 2 defendants: firm fined $200 individual fined $100; total fine $300.

Council Bluffs, Iowa. Sold barbiturates and hormones without physicians' prescriptions. 1 defendant fined $900 and court costs; total fine $935.

Louisville, Ky. Sold amphetamines and thyroid without physicians' prescriptions. 1 defendant fined $100 and court costs; total fine $125.

Louisville, Ky. Sold amphetamines and hormones without physicians' prescriptions. 2 defendants fined $100 each, and court costs; total fine $225.

Louisville, Ky. Sold amphetamines, sulfonamides, and thyroid without physicians' prescriptions. 2 defendants fined $100 each, and court costs; total fine $225.

Louisville, Ky. Sold amphetamines and thyroid without physicians' prescriptions. 2 defendants: fined a total of $100 and court costs; total $125.

Clarksdale, Miss. Sold sulfonamides without physicians' prescriptions. 3 defendants fined $50 each; total fine $150.

Corinth, Miss. Sold amphetamines and sulfonamides without physicians' prescriptions. 2 defendants fined $50 each; total fine $100.

Springfield, Mo. Sold amphetamines and barbiturates without physicians' prescriptions. 1 defendant fined $150.

Billings, Mont. Sold amphetamines and barbiturates without physicians' prescriptions. 1 defendant fined $250.

Long Island City, N. Y. Sold amphetamines without physicians' prescriptions. 2 defendants fined $100 each; total fine $200.

Cleveland, Ohio. Sold amphetamines and hormones without physicians' prescriptions. 3 defendants: firm fined $200; one individual fined $100; other individual fined $50; total fine $350.

Cleveland, Ohio. Sold amphetamines, hormones, and sulfonamides without physicians' prescriptions. 1 defendant fined $150.

Cleveland, Ohio. Sold amphetamines and hormones without physicians' prescriptions. 2 defendants: one fined $250; the other fined $50; total fine $300.

Cleveland, Ohio. Sold amphetamines, hormones, and sulfonamides without physicians' prescriptions. 2 defendants fined $150 each; total fine $300.

Madill, Okla. Sold amphetamines and barbiturates without physicians' prescriptions. 1 defendant fined $2,000.

Philadelphia, Pa. Sold a barbiturate without a physician's prescription. After being found guilty on March 6, the judge ordered a pre-sentencing investigation for the 2 defendants.

Seattle, Wash. Sold amphetamines and barbiturates without physicians' prescriptions. 1 defendant fined $750.

Thorp, Wis. Sold barbiturates and sulfonamides without physicians' prescriptions. 2 defendants: one fined $100; the other $50; total fine $150.

April, 1953:

Decatur, Ga. Sold and refilled prescriptions for amphetamines and barbiturates without physicians' authorizations. 3 defendants: firm and 2 individuals fined $150 each; individuals placed on probation for two years; total fine $450.

Quincy, Ill. Sold barbiturates, hormones, and sulfonamides without physicians' prescriptions. 2 defendants: firm fined $250; individual fined $500; total fine $750.

Boston, Mass. Sold amphetamines and barbiturates without physicians' prescriptions. 2 defendants: owner fined $500; each individual given a six-month suspended jail sentence and placed on probation for two years; total fine $500.

Corinth, Miss. Sold amphetamines without physicians' prescriptions. 1 defendant fined $50.

Springfield, Mo. Sold amphetamines and barbiturates without physicians' prescriptions. 1 defendant fined $500.

Broken Bow, Nebr. Sold and refilled prescriptions for amphetamines and barbiturates without physicians' authorizations. 1 defendant fined $70 and court costs; total fine $123.80.

Broken Bow, Nebr. Refilled prescriptions for barbiturates without physicians' authorizations. 2 defendants: owner fined $50 and court costs; individual fined $50; total fine $155.80.

Kinston, N. C. Sold amphetamines, barbiturates and sulfonamides without physicians' prescriptions. 1 defendant fined $75.

Kinston, N.C. Sold amphetamines and sulfonamides without physicians' prescriptions. 1 defendant fined $75.

Kinston, N.C. Sold amphetamines and sulfonamides without physicians' prescriptions. 1 defendant fined $75.

Toledo, Ohio. Sold amphetamines without physicians' prescriptions. 3 defendants: fined $75 each; fines against two of the defendants were suspended; total fine $75.

Toledo, Ohio. Sold amphetamines, sulfonamides, and thyroid without physicians' prescriptions. 1 defendant fined $75.

Philadelphia, Pa. Sold sulfonamides without physicians' prescriptions. 1 defendant fined $150.

Misbranded Drugs

July, 1952:

New York, N. Y. Labels on isopropyl alcohol rubbing compound, boric acid ointment, mineral oil, and elixir terpin hydrate and codeine failed to bear accurate statement of the quantity of the contents. Firm fined $250.

September, 1952:

Chicago, Ill. Potency of epinephrine hydrochloride 1-1000 (injectable) was greater than declared on the label. Firm fined $500.

Sullivan, Ind. Delivered for interstate shipment medicine not properly labeled and without any directions for treatment for the condition for which it was prescribed. Sentence deferred pending report by probation officer.

November, 1952:

Jersey City, N. J. Beatsol Rectifiers misbranded with false and misleading claims for the treatment of lost vitality, impotence, exhaustion, nervousness, and weakness; labeling failed to bear adequate warning statements. Beatsol Drawing Salve misbranded with false and misleading claims for the treatment of boils, carbuncles, ulcers, felons, and similar conditions. Beatsol Earache Liquid misbranded with false and misleading claims for relief of pain and aches in the ear, buzzing and water in the ear, and to soften wax in the ear. Firm fined $900.

January, 1953:

Chicago, Ill. Labeling of Green's Compound contained false and misleading statements representing the product as adequate and effective in the treatment of arthritis. Firm fined $1,500 and court costs; total fine $1,535.20.

Sullivan, Ind. "Herb doctor" found guilty, after jury trial in September, 1952, of shipping herbs not labeled with adequate directions for use in disease conditions for which he represented them to be effective. After probation officer's report, the defendant was sentenced on January 12, 1953, to one year in prison.

April, 1953:

La Center, Ky. Herb medicines were labeled with false and misleading therapeutic claims for the treatment of cancer, diabetes, appendicitis, overweight, high and low blood pressure, nervousness, arthritis, gallbladder attack, skin eruptions, vomiting, dizziness, irritability, abdominal pain, anemia, paleness, impurities and infections of the blood, kidney trouble, sciatic rheumatism, change of life, puncture wounds, etc. 1 defendant fined $850.

Suspensions

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flavor the sulfonamides equally well. The masking was not complete in spite of the addition of glycerin and sodium saccharin. The final choice depended upon the individual taking the medication. Usually one has a preference for one of the flavors. As a result, the suspending agent was the factor which exerted the most influence in the choice of the final product. Therefore, the products containing Kelgin LV were considered as being superior to the others.

The next products of choice were those containing bentonite as the suspending agent even though they demonstrated some slight separation and settling. These products were easily resuspended by gentle agitation of the container.

TABLE II.—RESULTS OF MACROSCOPIC EXAMINATION AND POUR TEST

Formula No.	Specimen A	Specimen B	Specimen C
1	e h j	e h j	e h j
2	e g j	e g j	e g j
3	e i j	e g j	e g j
4	e g j	e g j	e g j
5	e g j	e g j	e g j
6	f g j	f g j	f g j
7	e g j	e g j	e g j
8	e g j	f g k	e g j

e, homogeneous. f, Non-homogeneous. g, fluid pour. h, thick pour. i, too viscid to pour. j, no visible sedimentation. k, visible sedimentation.

The tragacanth-containing suspensions were next in choice. Like the products containing bentonite, the suspensions demonstrated some separation and settling which was readily corrected by gentle agitation. However, the bentonite products were considered superior to those containing tragacanth because of the length of time required to prepare the the tragacanth suspension. Also, when no preservative was used, the tragacanth suspensions rapidly developed mold growth while the bentonite containing products did not.

The suspensions containing pectin were the least acceptable. The products required a relatively large amount of pectin to maintain complete suspension. The use of this concentration of pectin resulted in a viscid product which was difficult to redisperse and resuspend by agitation.

The formulas and methods described were used in preparing small quantities of these suspensions. It is more than likely that some changes would be necessary before these formulas could be successfully prepared on a manufacturing basis. While a hand homogenizer was used in the preparation of these suspensions, other types of homogenizers could be used. It is quite possible that the use of other homogenizers would result in improved products.

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Authors' Summary

An effort was made to prepare a stable, palatable, and homogeneous oral preparation containing the three sulfonamides —sulfadiazine, sulfamerazine, and sulfamethazine—0.166 Gm. of each per 5 cc.

The suspending agents used (in order of preference) were: Kelgin LV (sodium alginate), Bentonite Magma, tragacanth, and pectin.

The flavors and vehicles used were Cacao Syrup and cinnamon syrup (special). The viscosity of the finished products was considerably increased when Cacao Syrup was employed. The oil of theobroma content of the cacao presented a problem. Glycerin was used as a masking agent as well as to wet the sodium alginate and pectin. Saccharin was also used to improve the taste.

Eight formulas are presented. "Lots" of 500 cc. of each were prepared for observation at room temperature, 10° C. and 38° C. Macroscopic and microscopic examinations were conducted at specified intervals. Photomicrographs were made to illustrate the suspending properties of the various agents.

The majority of these products remained suspended for ten months or longer. Those showing some separation or settling, with the exception of the pectin containing products, were easily and rapidly resuspended by gentle agitation.

Methyl and propyl parabens were used as preservatives.

The Stabler-Leadbeater Apothecary Shop in Alexandria, Virginia; founded in 1792; now a museum.

Revolutionary Then...A Model for the Profession Now...

PUROGENATED* TOXOIDS

Lederle

TRI-IMMUNOL**Diphtheria-Tetanus Toxoids Alum-Precipitated, and Pertussis Vaccine, Combined *Lederle* contains PUROGENATED* Alum-Precipitated Diphtheria and Tetanus Toxoids and Phase I Hemophilus Pertussis Vaccine. It is the preferred immunizing agent for protection against these infections.

MUMPS VACCINE *Lederle* is specific against all known strains of mumps. Developed by Lederle research, this vaccine is controlled by the rigid specifications of our testing laboratories. Wherever groups of sick children are endangered by contact with an infected person; to protect susceptible adolescents and adults; and to prevent epidemics among large groups of individuals, as in camps, schools, and orphanages, vaccination with MUMPS VACCINE *Lederle* will provide strong immunological response.

The profession of pharmacy is noted among the healing arts professions for continuity of management and alertness to progress. Pharmacies everywhere carry a full line of Lederle biological products—those described above and many others—including the Lederle viral and rickettsial serodiagnostic antigens.

Lederle research has produced the famed antibiotic aureomycin, in addition to an imimposing number of vitamin products, biologicals, allergenics, hematinics and liver extracts; and pharmaceuticals for livestock.

TRI-IMMUNOL: 1.5 cc. vial (1 immunization); 7.5 cc. vial (5 immunizations)

MUMPS VACCINE: 2 cc. vial (1 immunization); 10 cc. vial (5 immunizations)

*REG. U. S. PAT. OFF. **TRADE-MARK

LEDERLE LABORATORIES DIVISION *AMERICAN Cyanamid COMPANY* 30 ROCKEFELLER PLAZA, NEW YORK 20, N.Y.

Inspection Trip

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in the company's community relations program—a means of showing how the company is an asset to its home community.

A fifth objective deals with high school students. A plant tour is an effective way of showing these young people that industry isn't quite the ogre that is sometimes pictured to them. Also in the case of these groups particularly, the choice of a career in pharmacy or one of the other branches of science may be influenced by such trips. If they choose to follow such a career they then become prospective customers or perhaps prospective employees. Then, too, a company's source of nontechnical employees is the high school graduate in the plant community.

It should be emphasized at this point that these programs are not carried out in the spirit of altruism, but because it is the feeling that they pay their freight in good will which in turn pays off in the stuff that makes American industry what it is today—sales and profits.

Procedures

In all probability, many of you have made tours through one or more of the pharmaceutical companies, either as students, or as faculty chaperones, and a long drawn-out recitation of the procedures followed on visits of this kind would be superfluous. The brief material included again represents specifically one company, but from contacts with others in the field, I feel sure is representative of the other programs.

The invitation is extended to seniors, or in some cases, juniors and seniors. These limits are set up to hold the groups down to a size that can be adequately housed and a size that can be handled within the plant on tours. The visiting groups are expected to pay their own traveling expenses and other expenses en route, while the host company assumes hotel and meal expenses after arrival. Occasionally the question of chaperone's traveling expenses arises. It is our feeling that these should be paid by the school or by the student group through increasing their prorated travel charges enough to cover chaperone's expenses.

The question of students' wives making the trip has also been open to discussion. One company, for example, pointed out that they were operating this program on a fixed budget, and that if a large number of nonpharmacy wives were included, they had to cut down on the number of bonafide students they could entertain. The multiple-company visit has pretty well settled this problem, since it isn't feasible to ask the wives or married couples to return home after a part of their trip.

The actual mechanics of the tour also varies from company to company, but in general follows one of two patterns. Both of these involve, first, splitting the large group into smaller groups of from six to ten individuals.

One tour pattern utilizes as guides professional or technically trained people who are qualified and trained to explain briefly all of the plant and research operations which they visit on their tour route. They have the responsibility of both conducting the tours and explaining the departmental functions.

The other type uses girls from the technical and clerical classification as guides. These guides conduct the groups from department to department, and in each work center introduce a department head, foreman, or supervisor who takes over and explains the function of that particular department or section. The trips are scheduled on a timed basis, allowing about fifteen minutes for each stop and cover as many of the various manufacturing and research operations as possible. It is this latter tour with which I am most familiar, having been responsible for both the obstetrical and pediatric care necessary to bring it to maturity. Tours for nonprofessional groups, however, are handled by the girl guides themselves and involve about one and one-half hours through production only.

Regardless of the type of tour used, each participating company makes every effort to make the tour eductional and informative—to show the student how the material he studies and the small-scale operations he performs in the laboratory are broadened and expanded to produce pharmaceutical products on a large-scale commercial basis.

Results

As to the results of this program, here are the answers to the eighth question on the questionnaire, quoted without reference to company source:

What is your reaction to tours by pharmacy schools?

(1) "Favorable. Students are usually interested in manufacture and company organiza-

tion. At present we are able to handle only a limited number of pharmacy school visits. Large groups are sometimes difficult to handle. If schools would arrange smaller groups on two successive days, it would afford greater satisfaction to students and company."

(2) "Our experience with this type of group has been too limited to result in any definite opinion of their value."

(3) "We are heartily in favor of pharmacy school visits. Personally, I would like to see the entire program organized whereby pharmacy schools would include in their tuitions a charge for the railroad fare for the trip, letting the students pay a proportionate part of this expense each time they register so that when they reach their senior or junior years, the railroad fare would be paid and it would eliminate the problem of the students having to try and collect the entire railroad fare at one time. It would mean that the pharmaceutical houses would get a much higher percentage of the total enrollments than at the present time."

(4) "Highly productive of good relations."

(5) "The management feels that this is an important step in maintaining good will on the part of future pharmacists."

(6) "We are trying to set up a program but facilities are limited due to three separate plants."

(7) "We feel that a definite value is obtained by these tours, i.e., good will, future employees, etc."

(8) "The effort we put forth on these tours seems to be well repaid by the interest and attention on the part of the visitors."

(9) "Excellent when conducted from the standpoint of detailed pharmaceutical descriptions with the minimum amount of company product discussion."

In conclusion, speaking for my own company, but confident that what I say represents the reaction of the industry as a whole, we feel the results certainly justify the time and money spent. From the visitor's standpoint, the reactions must come from the 64 schools who participated, the faculty members, and some 4,600 students who made the "inspection trips" last year, as well as the many thousands who have made them previously.

Exchange

PECTIN N.F.

(PURIFIED POLYGALACTURONIC ACID METHYL ESTER)

FOR MEDICINAL AND PHARMACEUTICAL USES

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Made from Our Own California Citrus Fruits

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Also regularly supplied to pharmaceutical firms:

Sodium Calcium Galacturonate
Hesperidin Methyl Chalcone
Lemon Peel Infusion, dried
Pectin N. F. with dextrose
Citrus Bioflavonoids
Sodium Polypectate
Pectin Albedo
Pectin, L. M
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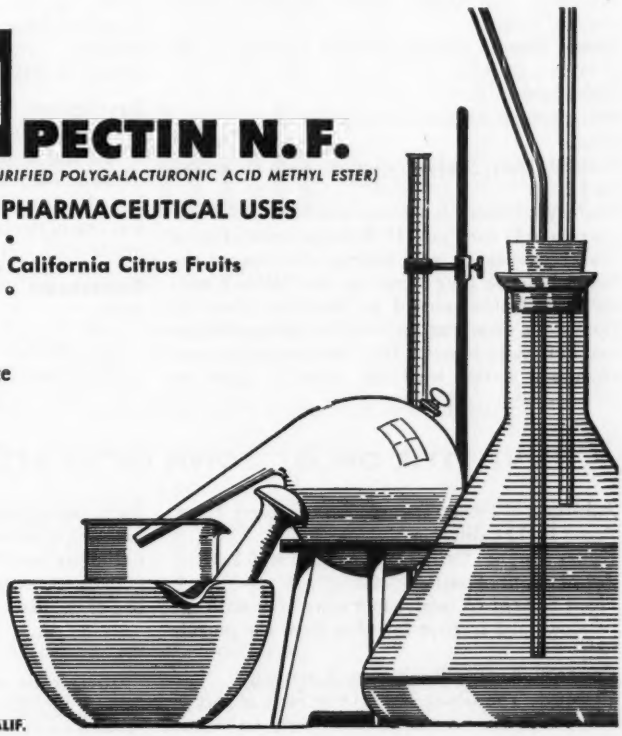
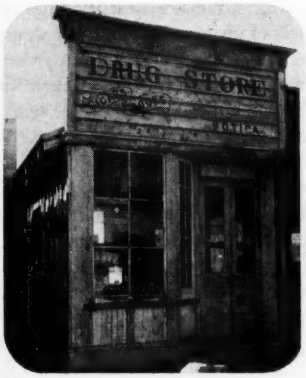


EARLY AMERICAN PHARMACIES

BY GEORGE B. GRIFFENHAGEN*



V. E. S. HOLDEN DRUG STORE (LEFT)

Address: San Joaquin Pioneer Museum, Stockton, California.
Hours Open: Tuesday through Saturday: 1:30 P.M. to 5:00 P.M.
Admission: Free.
Floor Space: 130 square feet (period room restoration).
Owner: San Joaquin Pioneer and Historical Society.
History: Erastus S. Holden arrived in San Francisco in 1849 with John H. Redington and after an unsuccessful try at gold mining, they opened the first wholesale drug house on the Pacific Coast. In 1850, Holden moved to Stockton where he opened his own drug store on the corner of Main and El Dorado Streets. This firm remained in continuous operation until 1951 when it closed its doors. In 1938, a bronze plate was placed on the corner marking the site of the first drug store in Stockton. The restoration at the Museum was opened in 1945.

Description: Two wall cases and two counters filled with bottles and pharmaceutical equipment which was acquired from the Holden drug store comprise the present exhibit. The original building, the first 2-story brick building in Stockton, was one of the handsomest drug stores in the California gold rush country.

References: *Pacific Drug Review*, **50:** 24 (Nov., 1938).

Ibid., **62:** 32 (April, 1950).

Pony Express, **12:** 1 (Nov., 1945).

VI. THE GHOST TOWN DRUG STORE (RIGHT)

Address: "Ghost Town," Knott's Berry Farm, Buena Park, California.
Hours Open: Daily 12:00 noon to 9:00 P.M.
Admission: Free.
Floor Space: A twelve-foot store front with the windows and interior for view from the outside only.
Owner: Knott's Berry Farm Restaurant.
History: The Ghost Town Drug Store is part of "Ghost Town," a reconstructed early California ghost mining town of some 100 separate buildings, gathered from various deserted mining towns of the California and Nevada desert regions, *ca.* 1890's. Construction began in 1940 and the drug store was one of the first exhibitions opened.

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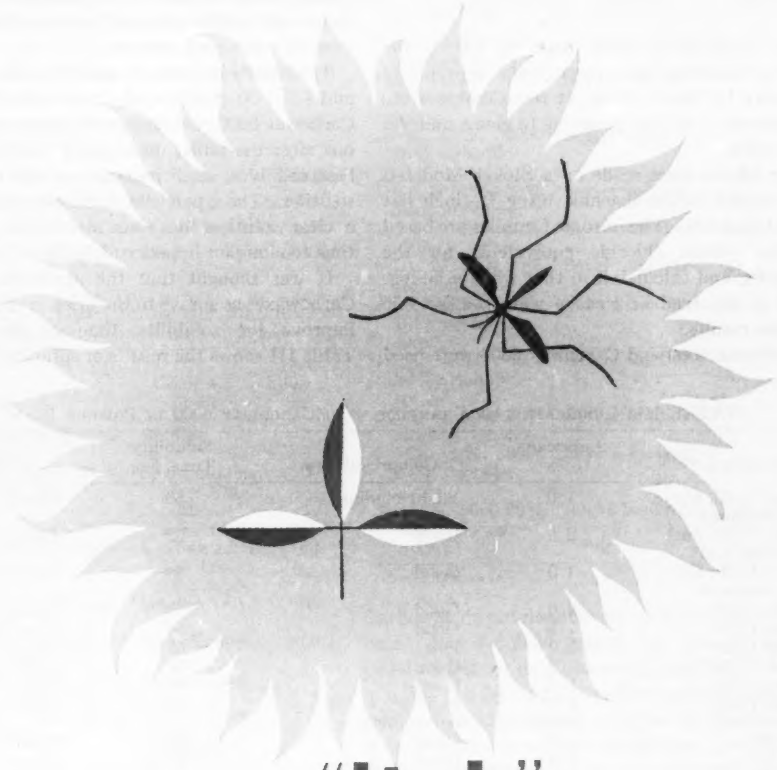
* Associate Curator, Division of Medicine and Public Health, Smithsonian Institution, Washington, D. C., and Consultant to the A.PH.A. Museum. The fifth and sixth of a series of monographs describing apothecary shop restorations on exhibition in the United States.



when your customers say "itch," suggest 'Quotane'

S.K.F.'s potent new topical anesthetic

- 'Quotane' is 10 times more potent than dibucaine in the standard rabbit cornea test.
- 'Quotane' has a minimal sensitization index, and is not related to the earlier, highly sensitizing "-caine" anesthetics.

'QUOTANE' OINTMENT	QUOTANE* LOTION
1 oz. tubes	2 fl. oz. plastic squeeze bottles

Smith, Kline & French Laboratories, Philadelphia

*T.M. Reg. U.S. Pat. Off. for dimethisoquin hydrochloride, S.K.F.

Soluble Tablet

••••••••••••••*from page 430*

The granulations were made by forcing the moist granulation mass through the appropriate size sieve by hand, drying at room temperature for 24 hours, and then resieving to give a uniform granulation.

The tablets were made on a Stokes Model E single punch tablet machine using $^{7}/_{32}$-inch flat surface punches. The isotonic formulas are based on the sodium chloride equivalents for the materials, and calculated so that when a 60-mg. tablet is dissolved in 2 cc. of water an isotonic solution results.

Carbowax 4000 and Carbowax 6000 were used as lubricating agents. When the lubricant was used as a powder, it was placed in a jar with the granules and tumbled for 15 minutes. Table II shows the results of using Carbowax 6000 in the form of a 100-mesh powder.

The results in Table II show that the I-3-A-20 and I-3-G-20 granules lubricated with 2 per cent Carbowax 6000 give the most satisfactory tablets, but after the tablet disintegrates and the tablet base dissolves, small particles are still floating in solution. These particles do dissolve later to give a clear solution, but this makes the solubility time too long for hypodermic tablets.

It was thought that the application of the Carbowaxes as sprays to the dried granules might improve the solubility time on the tablets. Table III shows the results of spraying the lubri-

TABLE II.—LUBRICATION OF GRANULES WITH CARBOWAX 6000 IN POWDER FORM

Granulation	Lubricant, %	Compressibility	Solubility Time, Sec.	Clarity of Solution
Lactose G-20, fines not removed	1.0	Slight binding	50	Clear
Lactose G-20, fines not removed	2.0	Good	52	Clear
Lactose G-20, fines not removed	3.0	Good	58	Clear
Lactose G-20	2.0	Good	56	Clear
Lactose G-20	1.5	Good	54	Clear
Lactose G-20	1.0	Fair	51	Clear
Lactose G-30	2.0	Good	>60	Clear
Lactose G-30	1.5	Good	>60	Clear
Lactose G-30	1.0	Fair	56	Clear
Lactose G-30	0.75	Severe binding	...	.....
I-1-G-20	1.0	Good	50.6	Clear
I-1-G-30	1.0	Good	51.9	Clear
I-1-A-20	1.0	Good	52.7	Clear
I-2-A-20	1.0	Sticking	...	.....
I-2-A-20	1.5	Slight sticking	41.5[a]	Floating particles
I-3-A-20	2.0	Good	32.9[a]	Floating particles
I-3-A-30	1.0	Slight sticking	37.2[a]	Floating particles
I-3-G-20	2.0	Good	33.5[a]	Floating particles
I-3-G-30	1.0	Severe binding	33.8[a]	Floating particles
I-4-A-20	1.5	Good	>60	Clear
I-4-A-30	1.5	Fair	>60	Clear
I-4-G-20	1.5	Good	>60	Clear
I-4-G-30	1.5	Good	>60	Clear
I-5-A-30	1.5	Sticking and binding	...	.....
I-5-A-20	1.5	Slight sticking	>60	Clear
I-6-A-20	1.5	Sticking	...	.....

Unless specified all granulations used did not contain "fines."
[a] Completely clear solution obtained in 45 seconds.
I—Isotonic. A—50 per cent alcohol. G—2 per cent liquid glucose solution.

TABLE III.—CARBOWAXES ADDED AS SPRAYS TO DRIED GRANULES

Granulation	Lubricant	Time Dried	Compressibility
Lactose	1.5% C.W. 4000 20% aqueous spray	45 min.	Sticking and binding
I-3-A-20	5% P.E.G. 400 10% alcoholic spray	30 min.	Severe sticking and binding
I-3-A-20	3% C.W. 1500 20% aqueous spray	30 min.	Severe sticking and binding
I-3-A-20	2% C.W. 4000 10% alcoholic spray	30 min.	Sticking and binding
I-3-A-20	2.5% C.W. 4000 10% alcoholic spray	2 hr.	Slight sticking, slight binding
I-3-A-20	3% C.W. 4000 20% aqueous spray	30 min.	Good
I-3-A-20	0.75% C.W. 6000 10% aqueous spray	30 min.	Binding
I-3-A-20	1% C.W. 6000 10% aqueous spray	45 min.	Fair to good

C.W.: Carbowax. P.E.G.: Polyethyleneglycol.

cant onto the dry granules and then drying the lubricated granules under infra-red light.

From Table III it can be seen that as much lubricant is required by the spray method as when used as a powder. The tablets that were made by this method did not disintegrate and were slow to dissolve.

The Carbowaxes were then applied to the freshly made damp granules in the form of a spray. The results of this experiment appear in Tables IV and V. From these tables it can be seen that the application of the Carbowaxes in this manner does not improve the solubility time of the tablets.

TABLE IV.—DAMP LACTOSE GRANULATION LUBRICATED WITH CARBOWAXES AS SPRAYS

Lubricant	Compressibility	Solubility, Sec.
2% C.W. 4000 20% alcoholic solution	Binding	...
2.5% C.W. 4000 20% alcoholic solution	Slight binding after 500 tablets were made	>60
3% C.W. 4000 20% alcoholic solution	Binding after 200 tablets were made	>60
2% C.W. 6000 10% aqueous solution	No difficulty	>60
2% C.W. 6000 20% alcoholic solution	No difficulty	>60
2.5% C.W. 6000 20% alcoholic solution	No difficulty	>60
1.5% C.W. 6000 20% alcoholic solution	Slight sticking and binding	...

C.W.: Carbowax.

Summary and Conclusions

A soluble tablet can be made on a tablet machine, but the solubility time is too long for practical application to the manufacture of hypodermic tablets by tablet machine. Application of the Carbowaxes as a powder gives the most satisfactory lubrication, but the particles of Carbowax do not dissolve as quickly as the tablet base. The I-3-A-20 granulation can be lubricated with 2 per cent Carbowax 6000 in the form of a fine powder and the tablets made to disintegrate in 10 seconds and dissolve in 33 seconds. A satisfactory means for solubilizing the Carbowaxes may be the answer to a suitable soluble lubricating agent.

TABLE V.—DAMP I-3-A-20 GRANULES LUBRICATED WITH CARBOWAXES AS SPRAYS

Lubricant	Compressibility	Solubility
2% C.W. 4000 20% alcoholic spray	Severe binding	...
1.5% C.W. 4000 20% alcoholic spray	Severe binding	...
2.5% C.W. 4000 20% alcoholic spray	Severe binding	...
3% C.W. 4000 20% alcoholic spray	Severe binding	...
4% C.W. 4000 20% alcoholic spray	Severe binding	...
5% C.W. 4000 20% alcoholic spray	Severe binding	...
2.5% C.W. 6000 10% aqueous spray	Severe binding	...
1.5% C.W. 6000 20% alcoholic spray	Severe binding	...
2% C.W. 6000 20% alcoholic spray	Severe binding	...
2.5% C.W. 6000 20% alcoholic spray	Severe binding	...
3% C.W. 6000 20% alcoholic spray	Slight binding, slight sticking	Clear solution in 48 sec.

C.W.: Carbowax.

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BRIEFLY NOTED

COLLEGES

Miss Hazel Orlean Maultsby of Austin, Tex., junior student in the College of Pharmacy, **University of Texas,** has been selected by Mortar Board, Senior Women's Honorary, for membership by virtue of her outstanding leadership and scholastic record during her academic life at the University. Miss Maultsby is a member of the University of Texas Student Branch of the A.PH.A. and has been treasurer of the Branch.

Dr. Stephen Wilson, Vice-Dean of the School of Pharmacy of the University of Pittsburgh, has accepted the deanship of **Wayne University,** College of Pharmacy, Detroit, Mich., succeeding Dr. Roland T. Lakey, who is retiring.

The **Cincinnati College of Pharmacy** Endowment Fund campaign has almost reached successful completion. The total of the Fund to be provided was set at $850,000 by the Board of University of Cincinnati. This Fund will be held as an investment and the interest or income derived from this investment will be used to defray expenses incurred in operation of the College by the University. The Fund was procured from many sources including all phases of pharmacy at all levels. Pharmacy owners, registered pharmacists, and wholesalers, as well as other industries and benevolent organizations contributed in varying amounts.

Six degrees of Doctor of Pharmacy were conferred June 13 by the **University of Southern California,** only university in the nation with this six-year program of study.

For the first time, the **University of Pittsburgh** School of Pharmacy will graduate 11 students specially trained in the science of medical service representation. The course was conducted by the Department of Pharmacy Administration with the cooperation of several pharmaceutical manufacturers and wholesalers.

The School of Pharmacy of the **University of Pittsburgh** held its Annual Alumni Dinner on June 9 at the Hotel Schenley ballroom, with Dr. Edward P. Claus, Professor of Pharmacognosy, as chairman. The dinner had as its theme the commemoration of 75 years of service to pharmaceutical education. An unusual feature of the dinner was that everyone on the program was a graduate of the School, including the officiating clergymen. The principal speakers were Dr. Melvin W. Green, director of educational relations, American Council on Pharmaceutical Education, whose address was entitled "Education: Pharmacy's Diamond;" and Mr. John A. MacCartney, manager of trade relations, Parke, Davis & Company, who spoke on "Half-Way from Home."

In the first year of its existence, the Women's Club of **Columbia University** College of Pharmacy has raised over $4,500 for the new building which the 124-year-old College plans to build.

ASSOCIATIONS

On June 5, John A. McGuire, former Congressman from Connecticut and author of the McGuire Act to restore effective fair trade, received the annual merit award given for outstanding services to pharmacy by **Delta Kappa Sigma,** Alumni Association of the University of Illinois' College of Pharmacy.

Dr. John L. Voigt, professor of pharmacy at the University of Mississippi, gave the highlights of a Market Research Program, suggesting greater use of newspaper advertising space, at the annual convention of the **Mississippi State Pharmaceutical Association** in Biloxi, Miss., June 16.

Other speakers on the program included Dr. Leslie M. Ohmart, chairman of the Department of Pharmacy, Massachusetts College of Pharmacy; Claude L. Smith, vice-president, McKesson & Robbins, Inc.; E. Allen Newcomb, executive secretary, National Wholesale Druggists Association.

More than 3,000 delegates to the **28th National Red Cross Convention** met in an opening plenary session of the three-day meeting at Constitution Hall, Washington, D.C., on June 22 to hear a report from their national president, E. Roland Harriman, and an address on youth's role in the organization by Miss Susan Long, Los Angeles, Calif., representing the Junior Red Cross. At the evening meeting, Mrs. Oveta Culp Hobby, Secretary of Health, Education, and Welfare, and Dr. John A. Hannah, Assistant Secretary of Defense, were the principal speakers.

The 83rd Annual Convention of the **New Jersey Pharmaceutical Association** was held at the Traymore, Atlantic City, June 14–18. On June 18 the following officers were elected for 1953–54: R. Raymond Ricciardi, Jersey City, president; Arnold A. Boyt, South River, first vice-president; and Irving Levinsky, Camden, second vice-president. Past President David I. Cohen of Jersey City was re-elected treasurer.

Recently elected officers for 1953–54 of the **Phi Delta Chi Pharmaceutical Fraternity** at the University of Mississippi are: Neal D. McEacharn, president; Felix D. Mestayer, vice-president; Jerry E. Henderson, secretary; Joe Polk Wynn, treasurer; Joe Maggio, inner guard; and Joseph V. A. Greco, prelate.

With the presentation of the Practical Pharmacy Merit Award for 1953 to Winston Gaskins, a pharmacy senior at Xavier University College of Pharmacy and a member of the Student Branch of the A.PH.A., the **Progressive Druggists' Association of New Orleans** again demonstrated its interest in the practical phase of college training in pharmacy. In order to be eligible for the $100 award, a student must be in his senior year with at least ten months of practical experience in a local pharmacy. In addition, each applicant must demonstrate, by written examination, that he possesses knowledge pertinent to the management of a pharmacy.

About six months ago the **New Jersey Board of Pharmacy** sent a notice to every pharmacy owner in the State indicating that the storage requirements for narcotic drugs would henceforth be vigorously enforced by the Board. It was emphasized that those narcotic drugs which could be taken to satisfy an addiction must be stored in a strong and adequate safe or completely dispersed throughout the prescription department. When questioned as to the results being obtained, Secretary Powers of the Board stated that an immediate decrease in narcotic drug robberies in pharmacies was noted, which leads the Board to believe that the campaign has been quite effective.

Dr. Glidden L. Brooks of Pittsburgh, Pa., pediatrician, professor, and specialist in the field of public health, has been appointed as the first full-time medical director for **United Cerebral Palsy,** it was recently announced by Leonard H. Goldenson, president of the organization.

The 47th Annual Convention of the **California Pharmaceutical Association** was held June 7–10 at the Hotel Statler, Los Angeles, Calif., with 1,135 delegates registered—the highest number ever registered by the Association. The following officers were elected for 1953–54: John Patrick Creighton, San Francisco, president; Raymond H. King, Santa Barbara, first vice-president; Louis L. Stein, Jr., Berkeley, second vice-president; Donald C. Norton, San Diego, third vice-president. Board of Directors: Wilfred Cohen, San Francisco, 3-yr. term; Harold Jewell, Monrovia, 2-yr. term; T. Guy Shafer, Oakland, 2-yr. term; E. D. Wagner, Long Beach, 1-yr. term; George Sargenti, Salinas, 1-yr. term; Joseph A. Cralego, Temple City, 1-yr. term; John Rosselli, Redwood City, 1-yr. term.

The Board of Grants of the **American Foundation for Pharmaceutical Education** has announced the newly selected Fellows and Teaching Fellows, who have received Foundation Awards, and the universities where they will do their graduate study. Their names follow: Aaron H. Anton, Yale University; John Autian, U. of Maryland; Carman Arthur Bliss, Purdue University; Joseph W. Byron, Philadelphia College of Pharmacy and Science; Donald B. Clark, U. of Buffalo; Benjamin Franklin Cooper, U. of North Carolina; Allen I. Dines, Ohio State University; James E. Dusenberry, U. of Connecticut; Bernard Ecanow, U. of Minnesota; Edward G. Feldman, U. of Wisconsin; Walter T. Gloor, U. of Washington; Esther Jane Wood Hall, U. of Texas; Charles William Hartman, U. of Florida; Bernard Israel, U. of Wisconsin; David Gilbert Kaiser, Purdue University; Lloyd Kennon, U. of Wisconsin; Joseph H. Kern, Ohio State University; Paul M. Lish, St. Louis University; Nicoholas George Lordi,

(Continued on next page)

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Briefly Noted

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Purdue University; Cleborn Edward Kimsey, U. of North Carolina; George R. McClure, U. of North Carolina; Roger Mantsavinos, Purdue University; John Dolan Mullins, U. of Florida; Milton O. Peacock, U. of Mississippi; Robert V. Petersen, U. of Minnesota; Claude Piantadosi, U. of North Carolina; Eric A. Schenk, U. of Washington; Carl A. Schlagel, Ohio State Univ.; Donald W. Schwan, Ohio State Univ.; Raymond E. Stenseth, U. of Michigan; and Randall B. Tinker, U. of Florida.

Members of the Board of Grants are: Guy Stanton Ford, Chairman; A. J. Brumbaugh; Ernest Little; Charles J. Lynn; and Robert Lincoln McNeil.

The new address of the Foundation is 1507 M Street, N.W., Washington 5, D.C.

HOSPITAL PHARMACY

The U.S. Public Health Service in cooperation with the **American Hospital Association** has conducted a survey on the requirement for maintenance, repair, and operating equipment and supplies for the non-Federal hospitals in continental United States. Of the 644 items on which data was obtained, 75 were drugs. The study came about as a result of the current need for such data in the event of mobilization for any type of emergency and is one of a series to establish estimated requirements for health supplies. Results are published in "Keeping Our Hospitals Operating—A Study of Supply and Equipment Requirements."

The 1953 Administrators Guide Issue of *Hospitals* which is published by the **American Hospital Association** reports 3,245 pharmacy departments in the 6,076 hospitals listed. The average daily census for 1952 was 1,335,673 compared with 1,292,841 during 1951.

Ernest J. Sinmacher was installed president of the **Louisiana Society of Hospital Pharmacists** at the annual banquet, June 25, in New Orleans.

Other officers for 1953–54 are: Frances Pizzolato, vice-president; Valerie Armbruster, secretary; and Betty Devine, treasurer.

The Society is now associated with the Louisiana Hospital Association, and is affiliated with the American Society of Hospital Pharmacist and the Southeastern Society of Hospital Pharmacist.

STUDENT BRANCHES

Charles Cole was recently elected president of the **University of Buffalo Student Branch.** Other new officers are: Mark Fogg, vice-president; Carol Hayes, secretary; and Joseph DeGiulio, treasurer.

New officers of the **University of California Student Branch** are: Kenneth Ballard, president; Monroe McCallum, vice-president; and Molly T. Chin, secretary-treasurer.

The members of the **Columbia University Student Branch** have elected the following officers for 1953–54; Saul Kaplan, president; Paul Beck, vice-president; Lola Dunn, secretary; and Arge Drubulis, treasurer.

Newly elected officers of the **University of Connecticut Student Branch** are: Wallace W. Leete, president; Mitchell M. Ross, vice-president; Eleanor A. Pajeski, corresponding secretary; Joan P. McNamara, recording secretary; and Raymond Y. Yamachika, treasurer.

The Duquesne University Student Branch has elected the following officers for 1953–54; John Migliore, president; Hugo Scarinzi, vice-president; and Anne K. Keane, secretary-treasurer.

Officers for 1953–54 have been elected by the **University of Georgia Student Branch:** Joel G. Hardman, president; James F. Brackett, vice-president; Barbara Black, corresponding secretary; Carole Hart, recording secretary; and Renzo S. Carver, Jr., treasurer.

The University of Houston Student Branch recently elected Donald Chase as president for next year. Other officers elected were: Mrs. Sandi Robinson, vice-president; Edward Nussbaum, secretary; and James G. Wilson, treasurer.

The Annual Banquet of the **Idaho State College of Pharmacy Student Branch** was held on May 16, in the Graveley Hall Tea Room on the Idaho State College of Pharmacy campus. Annual pharmacy awards were presented and the following newly elected Branch officers were installed at this time: Leland Miller, president; William Haselwood, vice-president; Mary Ida Lemmon, secretary; and George Palavos, treasurer.

Basil Fritsch is the newly elected president of the **University of Illinois Student Branch.** The other new officers are: Larry Smith, vice-president, and Nancy Andersen, secretary-treasurer.

The State University of Iowa Student Branch held its last meeting of the year on May 27 at 7:30 p.m. on the College of Pharmacy campus. Royce Chambers presided while the following new officers were installed: Carl N. Johnson, Jr., president; Charles W. Dillard, vice-president; Donald J. Hoye, secretary; Max Hurdle, treasurer; and Joan C. Clark, Union Board Representative.

Officers of the **University of Kansas City Student Branch** for 1953–54 are: Milton Miller, president; Jerry Bickley, vice-president; Shirley McVey, secretary; Theodore Auyong, treasurer; and student council representatives, Herbert Ashley and Hubert Snell.

The culmination of the **University of Kansas Student Branch's** drive to raise funds to purchase Promin to send to a leper colony about 20 miles from Pusan, Korea, was an ice cream social which was attended by more than 600 persons. The Branch first learned of this colony through the letters of Gene Stucky, KU alumnus, who appealed to his friends to get Promin for the colony. The 75 members of the Student Branch voted unanimously to contribute $50 to the project, and to conduct a drive to raise money for the purchase of the drug. Jay Oliver, pharmacy senior and chairman of the "Prolepko" (Promin for the Lepers in Korea) drive, said the ice cream social had netted $325, which will buy 2,000 two-gram vials of Promin. Oliver and four other pharmacy senior committee members—Bill Pittman, Rebecca Garvin, Joe Woods and Ralph Siemen—directed the drive.

(Continued on next page)

Branches

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The University of Maryland Student Branch varied its spring meetings by sponsoring a trip to Bethesda, Md., to tour the National Institutes of Health. The tour consisted of a very interesting introductory talk with slides by a representative of the Institutes, a visit to the pharmacy in the new clinic, and a stop at the Biological Testing Laboratory.

The last meeting of the year was held on May 14. Retiring President, Burton Goldstein presided and introduced the officers for 1953–54.

James Vedder is the newly elected president of the **University of New Mexico Student Branch.** The other new officers are: J. Bennie Flores, vice-president; William Coahran, secretary; Dr. James E. McDavid, treasurer; William Brown, historian; and Tom Chapman, representative to Student Senate.

The Oregon State College Student Branch recently elected the following officers for the coming year: John D. Hensala, president; Beverly Marson, secretary; and Karl E. Wise, treasurer.

At a recent meeting of the **Philadelphia College of Pharmacy and Science** the following officers were elected for 1953–54: James B. Leedy, president; Leonard Greenburg, vice-president; Frances Aversa, secretary; and Robert E. Bowen, treasurer.

The new officers for 1953–54 of the **University of Puerto Rico Student Branch** are: Luis Pla (Rodriguez), president; Luis Rosado (Vila), vice-president; Lucy Guadalupe (Puig), secretary; Vicente Perez, treasurer; and Rafael Ramirez, Angel J. Santiago, and Myrtha Rosas, board members.

The newly elected president of the **Purdue University Student Branch** is Harold Novotny. The other officers are: Bob Schweitzer, vice-president; Judy Wleklinski, secretary; and Enoch Ray Thompson, treasurer.

The University of Texas Student Branch recently elected James Kidwell as president; Winifred Hatton, vice-president; Barbara Gaston, secretary; Luther Parker, treasurer; Mark Huff, vice-treasurer; Allen Hann, reporter; and Joseph Cole, parliamentarian.

Each year it has become customary for the first day of the Utah Pharmaceutical Association Convention to be given over to the **University of Utah Student Branch.** This year, under the direction of Lowell Patton, the Branch furnished a program that was both entertaining and informative. The highlight of the evening was the presentation, by Dean L. David Hiner, of a check for $285.00 from the students, Student Branch, Phi Delta Chi fraternity, the Ladies Auxiliary and the faculty of the College of Pharmacy, to Mr. Christopher E. Athas as a contribution to the Convention of the A.PH.A. to be held in Salt Lake City.

Officers recently elected by the **State College of Washington** (Seattle) are: Glen Gossage, president; Ted Graves, vice-president; Ruth Aitkenhead, secretary; and Dr. Charles F. Martin, treasurer.

The annual **University of Washington Student Branch** banquet was changed this year to an all-pharmacy senior banquet and held in the Benjamin Franklin Hotel, Seattle, Wash., on May 14. Dr. Rufus A. Lyman and Mr Albert Kelley were guest speakers for the evening.

New officers for the Branch, who were elected the first of May, are: Fred Estabrook, president; Louis Stevens, vice-president; Jo Vanna Patelli, secretary; Vera Mankowski, treasurer; and Dr. Nathan A. Hall, faculty adviser.

Members of the **Wayne University Student Branch** recently installed the following new officers for 1953–54: Richard N. Knight, president; William Grady, vice-president; Gail Glaser, secretary; Robert O'Connor, treasurer; and Mildred Hansen, recording secretary.

LOCAL BRANCHES

At the May meeting of the **Albuquerque Branch** of the A.PH.A., Miss Frances Blair discussed the results of a prescription-pricing survey that was carried out in Albuquerque.

Newly elected officers of the Branch are: Robert Hanson, president; Donald Gibbs, vice-president; and Tom Shilton, secretary-treasurer.

A panel discussion on "The Problem of Pharmaceutical Duplication" was held at the June 9 meeting of the **South-East Wisconsin**

(Continued on page 464)

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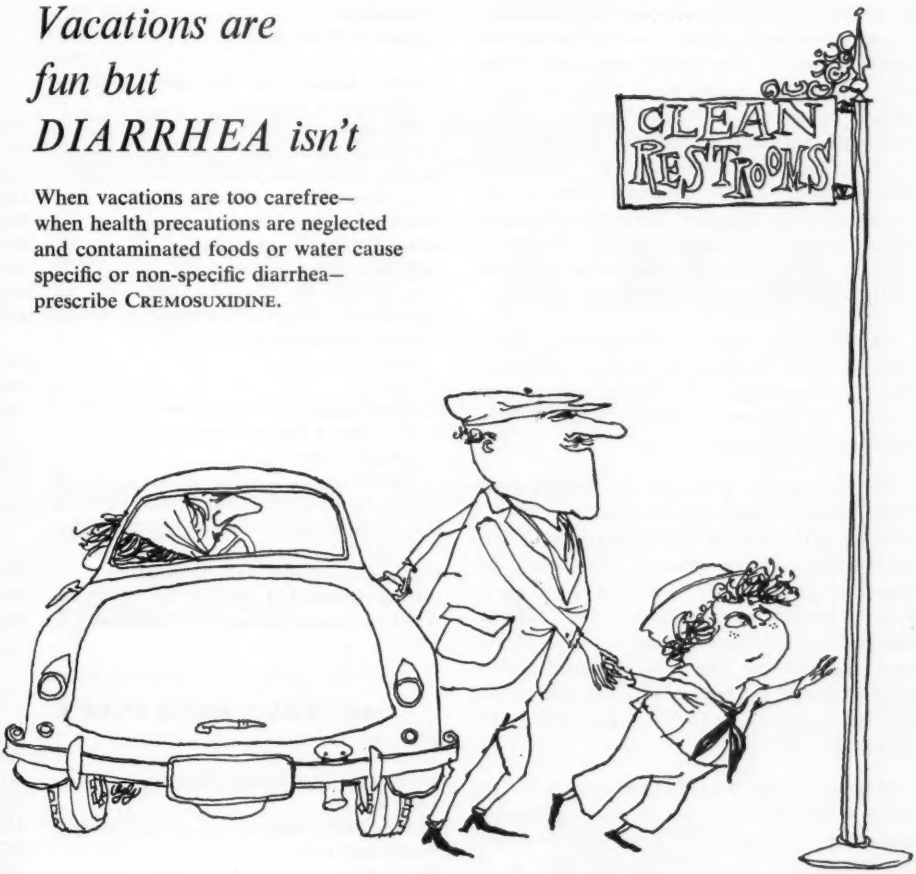

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Branches

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Branch. Moderator of the panel was William B. Benka, chief pharmacist at the Milwaukee County Hospital and past president of the Wisconsin Society of Hospital Pharmacists. Other members of the panel were: Max A. Lemberger, Jr., manager of The Pharmacy, a professional pharmacy in Milwaukee; Lawrence F. Madland, president of Haug Drug Co.; Dr. Clem O. Miller, research director and chairman of the Board of Directors of Kremers Urban Co.; and Sister Gladys Robinson, chief pharmacist and member of the administrative staff of Milwaukee Hospital.

At the same meeting, the following officers were elected: William B. Benka, president; Max A. Lemberger, Jr., vice-president; Dr. Eunice R. Bonow, secretary; and Frank Kuskowski, treasurer.

Mr. Hegleman, president of the **Northern New Jersey Branch,** presided at the May 6 meeting of the Branch held at Rutgers College of Pharmacy. New officers were elected for the coming year: Bert Morgovsky, president; Roy Bowers, vice-president; and Michael Iannarone, secretary-treasurer. Mr. Hegleman thanked the members present for their support during the term of his office and turned the meeting over to the new president, Bert Morgovsky.

Officers for the **Philadelphia Branch** for the 1953–54 season are: Dr. John A. Ellegood, president; Dr. Martin Barr, vice-president; Dr. Chester E. Poetsch, secretary; Dr. A. M. Martin, treasurer; and Dean Linwood F. Tice, delegate.

The Greater Los Angeles Branch held their annual banquet on June 16, honoring the graduating seniors of the College of Pharmacy at the University of Southern California. Dr. Robert P. Fischelis, secretary of the A.PH.A., was the guest speaker. He discussed the possible effect of the so-called "factory inspection" amendment to the Food, Drug and Cosmetic Act on the practice of pharmacy. He also urged all pharmacists to take an active part in public health services, such as cancer, tuberculosis and polio campaigns.

Fred L. Peterson, a member of the **Oregon Branch** of the A.PH.A., has recently been elected as Mayor of Portland, Ore.

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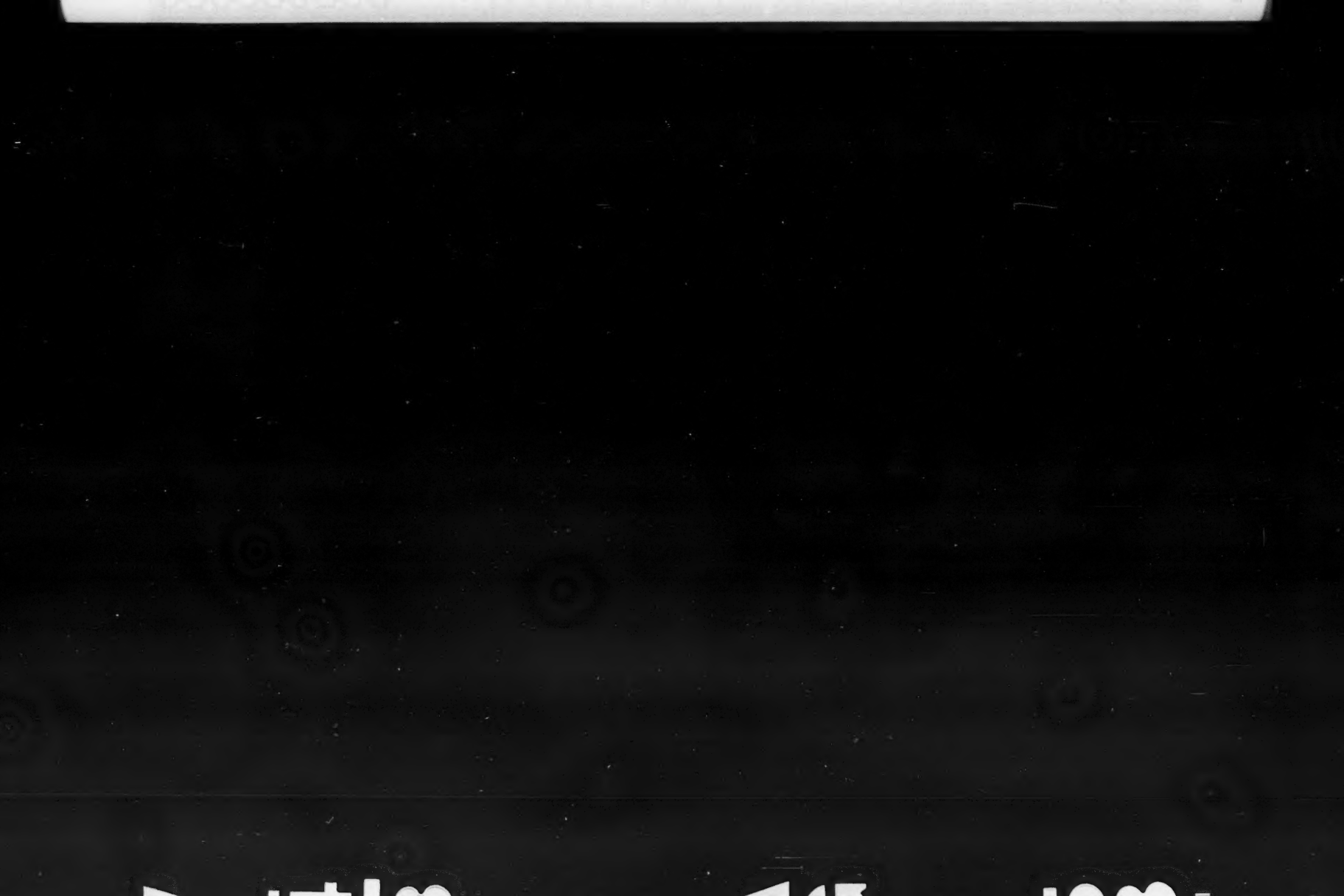


announcing:

acceptance by the A.M.A.

Council on Pharmacy and Chemistry of

Benzedrine* Sulfate

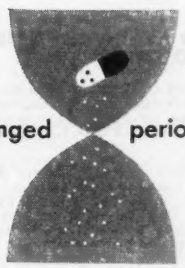
AMPHETAMINE SULFATE, S.K.F.

Spansule†

brand of sustained release capsules

"Council acceptance" means that, after critical examination, the A.M.A. Council has recognized the claim made for 'Spansule' capsules:

uniform release of medication over a prolonged period of time



'Spansule' capsules offer the physician:

1. sustained, uniform therapeutic effect
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3. convenience—just one dose daily

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*T.M. Reg. U.S. Pat. Off. for racemic amphetamine sulfate, S.K.F.
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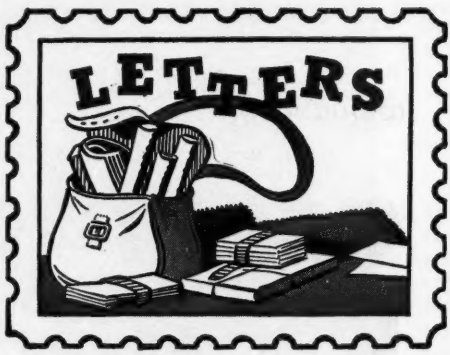


Journal, c/o Postmaster

Sirs:

This letter serves to inform you that of the many things I miss in the U.S.A. one of the foremost is the absence of the good old A.PH.A. JOURNAL. I always depended on the Journal to keep me abreast with the varied developments of pharmacy. I always looked forward to each new edition and thoroughly enjoyed digesting its contents.

Now I am overseas and haven't seen an A.PH.A. Journal for a long time. I should have forwarded to you my present address many months ago.

If you will kindly forward this Journal to me at my present address, I will be very much indebted to your ASSOCIATION.

New York, N. Y. (c/o P.M.)

PVT. RAYMOND C. FAHRNER

Louisiana Board of Pharmacy Adopts "Code of Ethics" of the A.Ph.A.

Sirs:

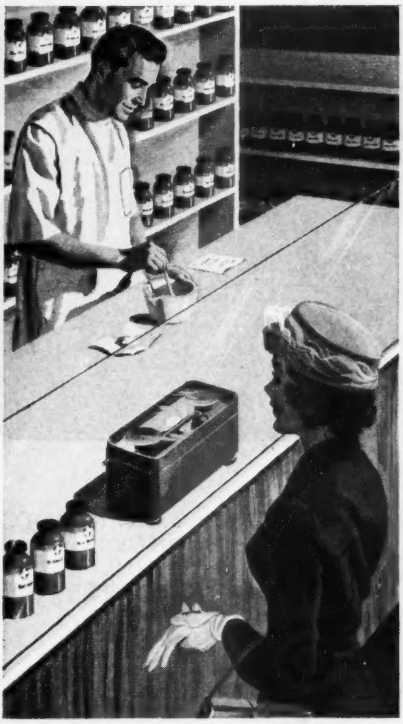
This is to inform you that at an official meeting of the Louisiana Board of Pharmacy held January 29th, 1953, at State Capitol, Baton Rouge, La., we adopted as part of our rules and regulations the "Code of Ethics of the AMERICAN PHARMACEUTICAL ASSOCIATION."

I know you will be most happy to hear this as we feel we are among the first to take such a step, and if you care to publish this for the information of other boards of pharmacy, you can do so.

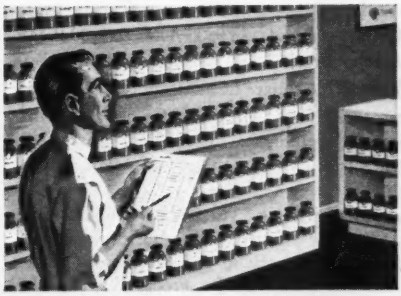
President Frank Rieger of Baton Rouge and Secretary Edgar Ewing of Ruston and all other board members are proud to have been a part in the adoption of such fine principles.

Alexandria, La. ALBERT H. MOORE, *Chairman*
EXAMINING COMMITTEE

How Compounding Influences Customers



1. To the layman, "compounding" is a fascinating procedure. Many patients, when given the opportunity, are interested in seeing their prescriptions formulated. The display of professional skill involved helps build their confidence in *your* Rx department and in the prescriptions prepared there.



2. Your Rx department contributes the largest volume and greatest profits of any part of your pharmacy. This service is enjoyed by pharmacists exclusively. Consequently, anything you do to increase the professional standing of *your* Rx department is a sound investment.

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EARLY AMERICAN PHARMACIES

BY GEORGE B. GRIFFENHAGEN*

VII. THE BETHLEHEM APOTHECARY

Address: 420 South Main Street, Bethlehem, Pennsylvania.

Hours Open: Weekdays: 9:00 A.M. to 9:00 P.M.

Admission: Free.

Floor Space: 80 square feet adjoining drug store.

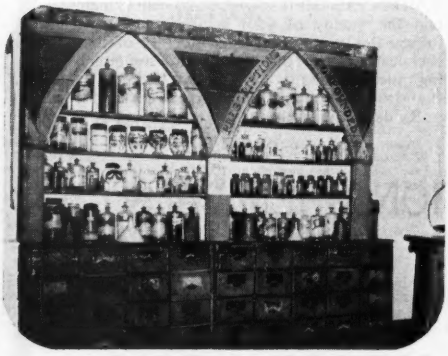
Owner: Building: Moravian Congregation of Bethlehem. Equipment: Bethlehem Historical Museum. Proprietor of Drug Store: Mr. Ralph Williams.

History: Described as "The Oldest Drug Store in the United States" that is still in business; it was founded as a dispensary in the Moravian "Community House" in 1743 by Dr. Frederick Otto. In 1752 the pharmacy, then known as "Die Apotheke," was moved to its present location where it has been ever since. In 1796, Dr. John Freytag bought the store and in 1839 Simon Rau purchased the business which remained in the Rau family for the next 71 years. The store, which is still open for business, is now known once again as "The Apothecary."

Description: The building adjoining the pharmacy today houses the original fireplace of the apothecary built in 1752; and much of the original equipment including the original counter, 25 delft jars purchased in 1743, and the prescription book, dating from 1743, is on exhibition.

References: J.A.PH.A., **20:** 166 (1931).
Druggists Circular, **71:** 1093 (1927).
Am. J. Pharm., **111:** 234 (1939).
Dow Diamond, **12:** 6 (Oct., 1949).
Travel, **91:** 22 (Oct., 1948).

VIII. GLENTWORTH APOTHECARY SHOP



Address: Philadelphia College of Pharmacy and Science.

Hours Open: Weekdays: 9:00 A.M. to 5:00 P.M.

Admission: Free.

Floor Space: 30 square feet (in lecture hall).

Owner: Philadelphia College of Pharmacy and Science.

History: George Glentworth founded the Glentworth Apothecary Shop on the southeast corner of Sassafras (now Race) and Chester Streets, Philadelphia, in 1812, which remained in the family for over 92 years. Restoration made by College *ca.* 1905; exhibited at the Sesquicentennial International Exposition in 1926; and is now in a lecture hall at the College.

Description: The fixtures which still exist are those of the original shop. Underneath the counter was a bunk where the apprentice slept so he could answer the night bell.

References: *Am. J. Pharm.*, **98:** 646 (1926).
J. A.PH.A., **25:** 230 (1936).
England, J. W., *The First Century of the Philadelphia College of Pharmacy*, 1922, pp. 107–108.

* Associate Curator, Division of Medicine and Public Health, Smithsonian Institution, Washington, D.C., and Consultant to the A.PH.A. Museum. The seventh and eighth of a series of monographs describing apothecary restorations on exhibition in the United States.

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This is possible with AMINODROX because gastric disturbance is avoided.

Now congestive heart failure, bronchial and cardiac asthma, status asthmaticus and paroxysmal dyspnea can be treated successfully with *oral* aminophylline in the form of AMINODROX.

Aminodrox Tablets contain 1 1/2 gr. aminophylline with 2 gr. activated aluminum hydroxide.

Aminodrox-Forte Tablets contain 3 gr. aminophylline with 4 gr. activated aluminum hydroxide.

Also available with 1/4 gr. phenobarbital.

℞ information service

Members of the American Pharmaceutical Association are invited to submit their professional problems to The Journal, 2215 Constitution Ave., N. W., Washington 7, D. C., giving all pertinent details.

Cold Sterilizing Solutions for Instruments

I would like to have some formulas for cold sterilization of instruments.—J. P. McM., Washington, D.C.

A report in the *Bulletin of the American Society of Hospital Pharmacists*, **8:** 224 (1952), gives the following as a most effective sterilizing solution:

Isopropyl Alcohol	500 ml.
Methyl Alcohol	40 ml.
Formaldehyde Solution U.S.P.	80 ml.
Benzalkonium Chloride, 12.8 per cent	8 ml.
Sodium Nitrite	10 Gm.
Distilled Water *q.s.*	1,000 ml.

Directions: Add the benzalkonium chloride (Zephiran) solution and the formaldehyde solution (formalin) to 300 ml. of distilled water. Dissolve the sodium nitrite in this mixture. Add the two alcohols slowly with constant stirring. Then add distilled water to 1,000 ml.

An acetone-containing sterilizing solution includes:

Acetone	250.0 parts
Chloroform	250.0 parts
Liquid Petrolatum	25.0 parts
Cresol	25.0 parts
Alcohol, 95 per cent	500.0 parts
Gentian Violet Solution, 1 per cent	3 drops

A formaldehyde-type formula contains:

Formaldehyde Solution U.S.P.	5.0 parts
Alcohol	70.0 parts
Distilled Water	10.0 parts
Isopropyl Alcohol	15.0 parts
Methenamine	0.3 parts

A suitable solution in which to keep cleaned and sterilized instruments contains:

Isopropyl Alcohol	93.0 parts
Propylene Glycol	5.0 parts
Compound Cresol Solution	2.0 parts

Nitroglycerin Ointment

Can you give me any information about a nitroglycerin ointment? Such an ointment is requested on a prescription by a Texas physician.—Dr. P., Washington, D.C.

A discussion of a prescription for 2 per cent nitroglycerin in lanolin to be applied to the hand of a patient suffering from angina appears in the J. A.PH.A., *Pract. Pharm. Ed.*, **11:** 619 (1950).

Eye Lotion

I am interested in preparing an ophthalmic solution which was formerly manufactured by "De Leoton Co.," Albany, N.Y., "Ophthalmic Solution No. 2."

This solution is no longer being manufactured by De Leoton, and I would like to prepare one of the same formula myself. I believe this solution to be somewhat a standard formula, but have been unable to locate the complete formula including the correct percentages of each ingredient.

If you can furnish me with the formula and the procedure for preparation I should appreciate it.

I am enclosing a label and carton from De Leoton's product. You will note that in listing of formula it contains mercury oxycyanide, 33 per cent, and mercury cyanide, 67 per cent, 0.015 Gm. Please check as to whether this is same percentage as Merck's mercury oxycyanide with mercury cyanide. You will note that the amounts of the other ingredients are not shown.—W. H. McR., New York.

The label statement indicates the ingredients to be mercury oxycyanide, 33 per cent, and mercury cyanide, 67 per cent, 0.015 Gm., with zinc sulfate, zinc phenolsulfonate, and boric acid in distilled water to make 60 cc.

Mercury oxycyanide, Merck, contains the above percentages of mercury oxycyanide and cyanide. The excess of mercuric cyanide is added to eliminate the danger of explosion of mercuric oxycyanide.

We are unable to give you the concentratio n of the other ingredients in the commercial lotion. However, the usual concentrations for these ingredients are: boric acid about 2 per cent, zinc sulfate about 0.15 per cent, zinc phenolsulfonate about 0.15 per cent.

New A.Ph.A. Members

THE ASSOCIATION EXTENDS A CORDIAL WELCOME TO THE FOLLOWING MEN AND WOMEN WHO WERE ACCEPTED FOR ACTIVE MEMBERSHIP DURING THE MONTH PRECEDING PREPARATION OF THIS ISSUE.

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Crum, Kenneth W., Phoenix

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Cafiso, John R., San Francisco

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Sessler, Robert G., Melbourne

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David, Norman A., Portland
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Steinbach, Howard D., Portland

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Schall, John H., Jr., Philadelphia

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Bateman, Idella V., St. George
Beecher, S. Howard, Ogden
Daniels, Ralph V., Payson
Fisher, Kimball, Salt Lake City
Flashman, George F., Salt Lake City
Gillett, Leonard R., Salt Lake City
Graham, Ross, Salt Lake City
King, Charles F., Salt Lake City
Linebaugh, Glade C., Salt Lake City
Lund, A. H., Salt Lake City
Wood, Albert E., Salt Lake City

WASHINGTON

Hampton, Richard J., Pullman

WISCONSIN

Oesterling, Victor K., Jr., Genoa City

POSSESSIONS

Fernandez, Doris, Puerto Rico
Monsen, Rodney, Alaska

CANADA

Sommerville, John N., Calgary, Alta.

FOREIGN

Bellavita, Vito, Perugia, Italy
Soldi, Alberto, Milano, Italy

Deceased Members

Baker, Howard L., Cincinnati, Ohio, February, 1953

Chaplin, B. A., San Angelo, Tex., May 31, 1953

Heckler, L. A., Pittsburgh, Pa., February, 1953

Heffner, E. F., Jr., Richmond, Va., December 27, 1952

Loppnow, William F., Milwaukee, Wis.

Malone, Paul E., Grafton, W.Va., June, 1953

Maxwell, David L., Washington, D.C., June 19, 1953

McHaffie, John Henry, Berkeley, Calif., April 24, 1953

Seal, Charles E., Plainfield, N. J., August, 1952

Sister Anna de Sales, New Haven, Conn.

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RECENT

PROGRESS IN MEDICINE

Pamine Highly Effective in Peptic Ulcer Treatment

A new drug, Pamine (epoxytropine tropate methylbromide) has been evaluated clinically along with 15 other compounds for its value as a gastric antisecretory agent in the treatment of peptic ulcer at the University of Chicago School of Medicine, where systematic study of drugs of this kind has been going on for several years.

It was reported by the group of investigators that when administered intramuscularly, Pamine was the most potent in reducing gastric acidity. At the same time, it produced relatively mild side effects, such as dryness of the mouth. However, these side effects are usually readily controlled by varying the dosage to conform to individual tolerances. Pamine produces little, if any, central nervous system stimulating effect.

(Kirsner, Joseph B., and Palmer, Walter L., *J. A. M. A.*, **151**: 798, March 7, 1953.)

The National Birth Total Continues to Rise

The national birth total continued to rise during the first three months of 1953, after setting a new annual record of 3,889,000 registered and unregistered births in 1952, according to vital statistics estimates released recently by the Public Health Service of the Department of Health, Education, and Welfare.

Births during the first quarter of 1953 were running about 29,000 ahead of the same period last year, an increase of 3 per cent. March was the tenth consecutive month in which the estimated total births topped corresponding monthly figures for the previous year.

The level of births for the first three months is at an annual rate of 25 live births per 1,000 population. This is slightly higher than the birth rate for the first quarter of 1952.

Since the end of World War II, more children have been born every year than in any wartime or prewar year. From 2,858,000 of registered and unregistered live births estimated for 1945, the total soared to 3,817,000 in 1947. After dropping to a slightly lower level for the next three years, birth totals reached a new high in 1951 and broke the record again in 1952.

Prophyllin Found Effective in Wide Variety of Skin Disorders

A New York Medical College group recently reported that Prophyllin (sodium propionate 99.75 per cent and sodium copper chlorophyllin 0.25 per cent) constitutes a "marked advance in wet dressing therapy" for a great many dermatologic conditions and eliminates the odor problem associated with sodium propionate. The wet dressing is prepared by dissolving 2.3 Gm. of the powder in 180 cc. (6 ounces) of water. The solution had a distinct bacteriostatic effect on test organisms, while boric acid, Burrow's Solution, and magnesium sulfate, in usual concentrations, showed no such effect.

Favorable results are reported in the treatment of acute contact dermatitis, atopic eczema and neurodermatitis, seborrheic eczema, rectal eczema, reactions following use of antibiotics, first and second degree burns, senile pruritus, varicose eczema, ichthyosis, moderate secondary infections, herpes simplex of the lips and genitalia, and diaper rash.

(Continued on page 474)

makes

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Top choice for profitable antihistaminic business!

7 forms for every antihistaminic use

Tablets Phenergan; 12.5 mg. Phenergan; bottles of 100

Syrup Phenergan; 6.25 mg. Phenergan per teaspoonful (5 cc.); bottles of 1 pint

Cream Phenergan Hydrochloride; tubes of 1.12 ounces

Phenergan Lotion with Neocalamine; bottles of 4 fluidounces

Phenergan Expectorant with Codeine; bottles of 1 pint

Phenergan Expectorant Plain (*Without Codeine*); bottles of 1 pint

Phenergan Expectorant Troches With Codeine; jars of 36 troches

Here's why your Rx profits stay up with Phenergan, the long-lasting, potent antihistamine. New, effective forms of Phenergan now make this unique antihistamine available for treating an increasing variety of allergic conditions.

Thorough detail coverage by the powerful Wyeth sales force ensures you fast turnover of the *entire* Phenergan line. Don't miss this opportunity for steady, repeat sales . . . stock the full line now!

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Intensive Wyeth promotion helps you build volume sales

Recent Progress

• • • • • • • • • • • • • • *from page 472*

(Peck, S. M., Traub, E. F., and Spoor, H. J., *Arch. Dermat. and Syphilol.*, **67**: 263, March, 1953.)

Solprogel Gel as a Vehicle for Topical Use of Certain Therapeutic Agents

Three physicians from the Surgical Service of Harlem Hospital, City of New York, have used aqueous gel of Solprogel (Soluble Products Company) as a vehicle for the topical application of several therapeutic agents. Solprogel is a white granular, vegetable hydrogel readily miscible with water at room temperature. Solprogel is sterile, and not a culture medium for bacteria. When mixed with chemotherapeutic agents, the antibiotic or enzymatic action of the drug is apparently not inhibited and a continual therapeutic action is observed. Solprogel, when mixed with appropriate quantities of sterile water, will produce a gelatinous substance of varying consistency, depending upon the amount of water used. When the gel is spread over an open wound, the mixture gradually dries into a protective film. For their study, the physicians used a mixture of one gram of Solprogel, 25 cc. of sterile distilled water, and 3 ampuls of streptokinase-dornase, each ampul containing 148,000 units of streptokinase and 17,000 units of streptodornase.

(Prigot, Aaron, Wright, Louis T., and Quash, Eugene T., *Antibiotics & Chemotherapy*, **3**: 418, April, 1953.)

Microphotographs in Three Dimensions

Roy Pence of the University of California Entomology Department, Los Angeles, Calif., has devised a simple, inexpensive three-dimension technique for shooting close-ups of microscopic specimens. The new technique is especially suited to studies in the lower magnification range, utilized in certain medical and dental studies. Mr. Pence gets his third-dimensional effect by shooting two pictures, one from an angle to the right, and the other from the left. Camera angles are obtained by tilting the platform on which the specimen is mounted. The degree of tilt approximates the eight degrees of normal visual convergence of the eye. For greater focal depth, Mr. Pence has also designed an iris diaphragm.

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BURNS and MINOR INJURIES
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Sterile Petrolatum Gauze Dressings

an improved approach to ideal hypotensive therapy

Low toxicity. The only hypotensive drug that causes no dangerous reactions, and almost no unpleasant ones.

Slow, smooth action. The hypotensive effect is more stable than with other agents. Critical adjustment of dosage is unnecessary. Tolerance to the hypotensive effect has not been reported.

Well suited to patients with relatively mild, labile hypertension. A valuable adjunct to other agents in advanced hypertension.

Bradycardia and mild sedation increase its value in most cases. Symptomatic improvement is usually marked.

Convenient, safe to prescribe

The usual starting dose is 2 tablets twice daily. If blood pressure does not begin to fall in 7 to 14 days, and the medication is well tolerated, the dose may be safely increased. Should there be a complaint of excessive sleepiness, the dose should be reduced. Some patients are adequately maintained on as little as one tablet per day.

Dosage of other agents (veratrum or hydralazine) used in conjunction with Raudixin must be carefully adjusted to the response of the patient. If Raudixin is added to another maintenance regimen, the usual dose is applicable, and it is often possible to reduce the dose of the other agent or agents.

Supplied in tablets of 50 mg., bottles of 100 and 1000.

SQUIBB

RAUDIXIN
SQUIBB RAUWOLFIA SERPENTINA
Tablets

"RAUDIXIN" IS A TRADEMARK

LEGAL ACTIONS OF THE

U.S. Food and Drug Administration

COURT JUDGMENTS MAY, 1953

Over-The-Counter Sales of Prescription Drugs

Athens, Ala. Refilled prescriptions for sulfonamides without physicians' authorizations. 2 defendants: each fined $50; total fine $100.

Birmingham, Ala. Sold amphetamines and barbiturates without physicians' prescriptions. 2 defendants: each fined $50; total fine $100.

Montgomery, Ala. Sold and refilled prescriptions for amphetamines and barbiturates without physicians' authorizations. Firm fined $25.

Decatur, Ga. Sold amphetamines and barbiturates without physicians' prescriptions. 1 defendant: fined $350 and placed on probation for two years.

Des Moines, Iowa. Sold amphetamines and barbiturates without physicians' prescriptions. 2 defendants: one defendant fined $900; the other placed on probation for six months.

Boston, Mass. Sold amphetamines and barbiturates without physicians' prescriptions. 1 defendant: fined $500, given a one-year suspended jail term, and placed on two-year probation.

Rochester, Minn. Sold amphetamines and barbiturates without physicians' prescriptions. 2 defendants: each fined $500 and placed on probation for three years; total fine $1,000.

Aurora, Mo. Sold amphetamines, barbiturates, and hormones without physicians' prescriptions. 1 defendant: fined $300; total fine $300.

Aurora, Mo. Sold amphetamines, barbiturates, hormones, and thyroid without physicians' prescriptions. 2 defendants: each fined $150; total fine $300.

Aurora, Mo. Sold amphetamines, barbiturates, hormones, sulfonamides, and thyroid without physicians' prescriptions. 1 defendant: fined $300.

Kansas City, Mo. Sold and refilled prescriptions for amphetamines, barbiturates, and hormones without physicians' authorizations. 4 defendants: firm fined $60 and court costs; one individual fined $60; other two individuals fined $30 each; total fine $223.

Joplin, Mo. Sold amphetamines, barbiturates, hormones, sulfonamides, and thyroid without physicians' prescriptions. 2 defendants: firm fined $300; individual fined $250 and court costs; total fine $589.

Joplin, Mo. Sold amphetamines, barbiturates, hormones, and sulfonamides without physicians' prescriptions. 4 defendants: firm fined $500; one individual fined $50; 2 individuals fined $100 each and court costs; total fine $789.

Red Bank, N.J. Refilled prescriptions for amphetamines, sulfonamides, and Neotrizine without physicians' authorizations. 2 defendants: firm fined $600; individual fined $250 and placed on probation for two years; total fine $850.

Atoka, Okla. Sold barbiturates and Neopenzine without physicians' prescriptions. 1 defendant: fined $200.

Philadelphia, Pa. Refilled prescriptions for barbiturates without physicians' authorizations. 1 defendant: fined $300.

Harlingen, Tex. Sold amphetamines, barbiturates, sulfonamides, and thyroid without physicians' prescriptions. 1 defendant: fined $300.

Spooner, Wis. Sold barbiturates and sulfonamides without physicians' prescriptions. 3 defendants: firm fined $640; one individual fined $114; the other individual given a six-month suspended jail sentence and placed on probation for one year; total fine $754.

Misbranded Drugs

Baudette, Minn. Vio-Ferronte (a drug) was deficient in vitamins B_1, B_6, and C. 1 defendant: fined $350.

Cleveland, Ohio. Misbranded drugs by the following false and misleading therapeutic claims in accompanying literature: Inorganic Nutrient would be adequate and effective in the treatment of diabetes, arthritis, rheumatism, asthma, brucellosis, Malta fever, hay fever, backaches and headaches, nervousness, insomnia, mastitis, Buerger's and Paget's diseases, lumbago, sciatica, bone fractures, sterility, loss of weight and strength, influenza, etc.; cobalt, as supplied by the drug, is required to regenerate and mature red blood cells, prevent anemia, and increase hemoglobin; the drug would form within the body antibiotics destructive to brucella organisms of all types. Soya Lecithin is a tonic and would be adequate and effective in the treatment of calcination of the skeleton, hardening of the arteries, psoriasis, high and low blood pressure, and hypertension, and in the prevention of fatty livers. Di-Calcium Phosphate tablets would be adequate and effective in the treatment of polio, diabetes, and Buerger's disease. Calcium Phytate tablets would be adequate and effective in the treatment of polio, and would effect steady improvement in the general health of the user; calcium phytate was omitted in part. 2 defendants: each fined $300; total fine $600.

Coming Next Month

Complete Story of the A. PH. A. *Convention in Salt Lake City*

DO YOU KNOW THIS MAN?
HIS NEGLIGENCE IS CAUSING THOUSANDS OF DEATHS FROM HEART DISEASE
Here's a description of the culprit: Overweight. Short of breath. (The old ticker really pounds on a flight of stairs.)
Often over-exercises on week-ends after a sedentary week. Sometimes bothered by a peculiar swelling in the ankles.
Works too hard. (Feels he's indispensable in his job.) Has trouble relaxing. Worries. Sleeps poorly. Complains of being "always tired."
Had a couple of attacks of "indigestion" recently. When asked by wife to please check with doctor, was heard to reply: "What for? I'm not sick . . . besides I'm too busy!"
RIGHT HAND
LEFT HAND
The greatest problem in dealing with heart disease today is the man (or woman) who ignores the "danger signals" until it may be too late to take advantage of the help which medical science today is prepared to give.
However, thousands of people are now living good lives with bad hearts . . . because they acted wisely and in time . . . because they knew that in their physicians' hands they were in good hands.
For it is a fact that much progress has already been made in dealing with heart ailments. More and more research is being carried on, largely through such great agencies as the American Heart Association and its nation-wide affiliates, the National Heart Institute; and a number of pharmaceutical companies, including Parke, Davis & Company, since 1866 makers of medicines prescribed by physicians.
PARKE, DAVIS & CO.

Here is an advertisement that is running in LIFE, Time, Newsweek, and Collier's.

We like to think it may be more *truly helpful* to people than almost any other ad they run across in these influential magazines. It is the latest message in a campaign we started 25 years ago this month—an effort to make the subject of *prompt and proper medical care* "come alive" to the man on the street, the woman in the home.

We do not employ what the advertising experts call "scare copy." And we know better than to scold people—rather, we try to be good-natured in putting over a serious message. Above all else, we keep before us the thought that the unkindest thing any advertising can do is to create uncalled-for optimism or raise false hopes.

It is gratifying to have this advertising spoken of as performing a distinct public service. We like to get "high readership" ratings from organizations equipped to measure and evaluate the extent to which advertising is seen and read.

Most of all, though, we are pleased to get almost daily evidence from the field that these current advertisements seem to be *nudging people into action*—and that the specific examples we are citing about the tragic consequences of delay are helping to generate among people a heightened respect for the professions of medicine and pharmacy.

MEDICAMENTA VERA · PD CO.

Parke, Davis & Company
DETROIT, MICHIGAN

users are sold...
others just need to be told...

Clinitest

BRAND • REG. U.S. PAT. OFF.

sealed-in-foil reagent tablets

Clinitest **package inserts, in sets and bottles of 36, tell users about the advantages of Sealed-in-Foil Tablets. Show No. 2157 to your diabetic customers.**

sealed in foil—will not spoil

No moisture can reach the tablets.
Last tablet as accurate as the first.
Unaffected by humid weather or steamy bathrooms.
Convenient package of Sealed-in-Foil Tablets, box of 24—No. 2157.

Clinitest Reagent Tablets also available in bottles of 36 (No. 2107).

AMES
COMPANY, INC · ELKHART, INDIANA

Ames Company of Canada, Ltd., Toronto

46553

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FEBRUARY 1953 TO AUGUST 1953

CALCISALIN TABLETS

Description: Tablets, six of which provide: calcium lactate, 2.0 Gm.; ferrous sulfate exsiccated, 50.0 mg.; vitamin A acetate (crystalline), 6,000 U.S.P. units; vitamin D (irradiated ergosterol), 400 U.S.P. units; ascorbic acid (as sodium ascorbate), 100.0 mg.; thiamine mononitrate, 1.5 mg.; riboflavin, 2.5 mg.; niacinamide, 15.0 mg.; calcium pantothenate, 5.0 mg.; pyridoxine hydrochloride, 0.50 mg.; Vitamin B_{12} crystalline, U.S.P., 6.0 mcg.; folic acid, 0.25 mg.; Dried Aluminum Hydroxide Gel, U.S.P., 1.5 Gm.

Indications: For use as a prenatal dietary supplement; for the prophylaxis and treatment of leg cramps in pregnancy.

Administration: Recommended dosage is two tablets three times daily, after meals, or more as directed by the physician.

Form Supplied: Bottles of 100 tablets.

Source: The Harrower Laboratory, Inc., Jersey City, N.J.

CORTOMYD OPHTHALMIC SUSPENSION—STERILE

Description: Suspension contains: cortisone acetate (microcrystalline), 1.5 per cent, and sodium sulfacetamide, 10 per cent.

Indications: Recommended for acute, chronic and allergic blepharitis; spastic entropion due to local irritation; conjunctivitis; corneal ulcer; interstitial keratitis; herpes zoster ophthalmicus; phylctenular keratoconjunctivitis; neovascularization; scleritis; episcleritis; acute, chronic, traumatic iritis; and iridocyclitis.

Administration: One or two drops instilled into the conjuctival sac every two or three hours during the day, less often at night, until a favorable response is obtained.

Form Supplied: 5-cc. dropper bottle with a specially designed closure to insure sterility.

Source: Schering Corporation, Bloomfield, N.J.

ERYTHROMYCIN TABLETS

Description: Each peach-colored, enteric-coated tablet contains 100 mg. of erythromycin.

Indications: For the treatment of pneumococcic, staphyloccic, and streptococcic infections, particularly in patients who are sensitive to other antibiotics and in infections in which the causative organisms are resistant to other antibiotics—pharyngitis, tonsillitis, scarlet fever, pneumonia, septicemia, pyodermas, enteritis, otitis media and sinusitis.

Administration: The average recommended dose is 200 mg. every six hours, continued for at least 48 hours after the temperature has returned to normal. In severe infections 300 to 500 mg. every four to six hours may be employed.

Form Supplied: Bottles of 25 tablets.

Source: The Upjohn Company, Kalamazoo, Mich.

HARVIT-12 TABLETS

Description: Each sugar-coated, buff-colored tablet contains: vitamin B_{12}, 25 mcg.; stomach substance, 50 mg.

Indications: For treatment of pernicious and secondary anemias; growth retardation in children; and other conditions in which B_{12} has proved effective.

Administration: One or two tablets per day.

Form Supplied: Bottles of 30 and 100 tablets.

Source: The G. F. Harvey Company, Saratoga Springs, N.Y.

INJECTION DIRECT SKY BLUE

Description: Injection Direct Sky Blue, 4 per cent, is an azo dye found to possess all the qualities necessary for vital staining of lymphatic tissue. The dye has a special affinity for the lymphatic system, and is able to penetrate into the surgical area in a short time.

Indications: For vital staining of the lymphatics for positive identification during surgery, as for gastric or bronchiogenic carcinoma.

Administration: By injection, in conjunction with Wydase (Lyophilized hyaluronidase, Wyeth) at the site of surgery.

Form Supplied: Color-break ampuls of 5 cc.

Source: Wyeth, Inc., Philadelphia, Pa.

(Continued on next page)

MUTAMYCIN

Description: Mutamycin is a dry powder containing equal parts of dihydrostreptomycin sulfate and streptomycin sulfate. Solutions for injection are prepared by adding either Water for Injection U.S.P., or Sterile Isotonic Sodium Chloride Solution, For Parenteral Use, U.S.P. In the dry state, Mutamycin is stable at room temperature. Sterile solutions are relatively stable and may be stored at room temperature for one week without loss of potency.

Indications: For the treatment of infections caused by gram-negative or acid-fast organisms; for the treatment of certain infections caused by streptomycin-sensitive, penicillin-resistant organisms, and gram-positive organisms. In surgery or other well-established therapeutic procedures associated with the treatment of tuberculosis, Mutamycin should be recognized merely as adjunctive therapy and not as substitutive therapy.

Administration: Dosage varies with the sensitivity of the pathogen, the nature and extent of the infection, the body weight of the patient and the clinical response. The solution of Mutamycin should be injected slowly in a concentration 0.5–1.0 Gm. per cc. Intermittent intramuscular administration is the method of choice.

Form Supplied: Vials containing the equivalents of 1 and 5 Gm. free base.

Source: Bristol Laboratories, Inc., Syracuse, N.Y.

NEO DICALOSSA TABLETS

Description: Each tablet contains: vitamin A, 1,000 U.S.P. units; vitamin D, 67 U.S.P. units; vitamin B_1, 0.25 mg.; vitamin B_2, 0.42 mg.; niacinamide, 2.5 mg.; vitamin C, 17 mg.; calcium (elemental), 250 mg.; iron (elemental), 2.5 mg.; vitamin B_{12}, 0.5 mcg.; folic acid 0.067 mg.

Indications: For use as a prenatal vitamin-mineral supplement.

Administration: Average daily dose is six tablets.

Form Supplied: Bottles of 126, 252, and 1,000.

Source: G. W. Carnrick Company, Newark, N.J.

NOVADONNA SOLUTION

Description: Solution, each cc. contains: homatropine methylbromide, 1.512 mg.; hyoscyamine sulfate, 0.283 mg.; and hyoscine hydrobromide, 0.019 mg.

Indications: For use as an antispasmodic.

Administration: Usual dose 6 minims; may be prescribed safely in same doses as belladonna tincture.

Form Supplied: Bottles of 4 fl. oz.

Source: Sherman Laboratories, Detroit, Mich.

NOVADONNAL TABLETS

Description: Tablets containing: 6 minims of Novadonna Solution, plus phenobarbital 1/4 gr.

Indications: For use as an antispasmodic.

Administration: Usual dose one to two tablets four times daily.

Form Supplied: Bottles of 100 and 1,000 tablets.

Source: Sherman Laboratories, Detroit, Mich.

PAMINE TABLETS

Description: Each white compressed tablet contains 2.5 mg. epoxytropine tropate methylbromide.

Indications: Whenever anticholinergic effects, either spasmolytic or antisecretory, are desired. For use as an adjunct in the management of peptic ulcer and gastric disorders associated with hyperacidity and hypermotility; the postgastrectomy "dumping syndrome"; excessive sweating, and excessive salivation. It may also prove useful in the symptomatic relief of hyperemesis gravidarum and "functional" nausea and vomiting, ureteral and vesical spasms, and acute non-specific diarrheas associated with hypermotility of the gastrointestinal tract and diarrhea associated with certain antibiotics.

Administration: The average dose is 2.5 mg. orally one-half hour before meals and 2.5 to 5 mg. at bedtime. However, as is the case with other potent anticholinergic drugs, there is marked variability in individual clinical response and tolerance to the side effects of the drug, which are typical of the anticholinergic drugs, the most frequent being dryness of the mouth.

Form Supplied: Bottles of 100 tables.

Source: The Upjohn Company, Kalamazoo, Mich.

PARABEL—TABLETS AND ELIXIR

Description: Each tablet or 5 cc. of orange-colored, licorice-flavored elixer contains: *d*-hyoscyamine sulfate, 0.1037 mg.; atropine sulfate, 0.0194 mg.; scopolamine hydrobromide, 0.0065 mg.; phenobarbital, 16.0 mg.; and alcohol, 20 per cent by volume.

Indications: For the relief of gastrointestinal smooth muscle spasm, as in the treatment of peptic ulcer, pylorospasm, mucous colitis, dysenteries, and non-specific chronic ulcerative colitis.

Administration: 5 cc. (teaspoonful) of the elixir or one tablet three times daily, one-half hour before meals. Dosage is increased until optimal relief is afforded, as determined by individual patients.

Form Supplied: Bottles of 100 and 1,000 tablets; pints and gallons of elixir.

Source: U.S. Standard Products, Woodworth, Wis.

PROVELL MALEATE

Description: Each cross-scored tablet contains 0.5 mg. of the crystalline maleate salts of the alkaloids protoveratrine A and B obtained from *Veratrum album.*

Indications: For the treatment of any form of hypertension—essential hypertension, malignant hypertension; hypertension associated with toxemia of pregnancy (eclampsia), pulmonary edema, congestive heart failure, acute and chronic glomerulonephritis, pyelonephritis, and prolonged cortisone therapy. For relief of cardiac dyspnea, paroxysmal

nocturnal dyspnea, and headache caused by hypertension.

Administration: A total daily oral dose of 1 to 2.5 mg. (divided into three to five doses, preferably taken after meals and at bedtime, at intervals of four to six hours) will produce a satisfactory lowering of blood pressure in the majority of hypertensive patients. *Patients taking it should be under careful medical supervision,* and *both patient and physician should be familiar with the nature of the symptoms of overdosage* (choking sensations, salivation, nausea, and vomiting).

Form Supplied: Bottles of 100 tablets.

Source: Eli Lilly and Company, Indianapolis, Ind.

Other New Products

ACNOMEL CAKE

Acnomel Cake is a companion form to *Smith, Kline & French Laboratories'* Acnomel Cream. Its active ingredients are one-half the strength of those in Acnomel Cream and are contained in a special flesh-tinted, grease-free cake base. Especially formulated for patients with blond or dry, sensitive skin, it may be used as well for all patients who desire a flesh-tinted medicinal and cosmetic preparation to mask unsightly acne lesions throughout the day. Acnomel Cake should be applied no oftener than two or three times in 24 hours. Should excessive erythema or scaling occur, the patient should apply less frequently or discontinue until the reaction subsides. It is available in 1-oz. plastic containers.

BICILLIN COMPOUND REPOSITORY

A recent addition to its list of Bicillin compounds is Bicillin Compound Repository, which has recently been introduced by *Wyeth, Inc.* Bicillin C-R (Compound Repository) is a mixture of N-N'dibenzylethylenediamine dipenicillin G and procaine penicillin G in equal therapeutic quantities. It is valuable in the treatment of penicillin-susceptible infections and as a long-term prophylaxis against secondary bacterial infection; it provides high initial pencillin blood level plus long-term effectiveness—for a week or more. Bicillin C-R is administered by deep intramuscular injection only, and is supplied in individual Tubex dose units, containing 300,000 units of each penicillin (600,000 units total) in 1 cc. Ready for use without reconstitution.

ESTROGESTIN, AQUEOUS

U. S. Standard Products Company has recently introduced Estrogestin, Aqueous. Each cc. contains 2.2 mg. of estrogenic substance and 25 mg. of progesterone. It is indicated for the treatment of amenorrhea, irregular menstruation, hypermenorrhea, and threatened abortion.

The recommended dosages are: Amenorrhea—1 cc. intramuscularly, bleeding will usually occur within 48 hours. 1 cc. to be administered 26 days after first-day bleeding occurs. It may require several months treatment to establish a normal cycle. Irregular menstruation—1 cc. two days before expected menstruations. Repeat, if necessary, as in amenorrhea to establish regular cycle. Hypermenorrhea—rule out pelvic pathology. 1 cc. will usually stop the flow, which may be followed in 48 hours by bleeding. If this bleeding is not normal or if irregular bleedings occur, it is suggested that administration of menartrone 1 tablet daily be given for 25 days then an injection of Estrogestin. Bleeding should occur within 48 to 72 hours. Threatened abortion—1 cc. biweekly throughout the period of expected abortion. In certain cases during the danger period 1 cc. daily may be necessary.

It is supplied in 10-cc. vials. Estrogestin is also supplied in oil in 5-cc. vials.

L-AMINO ACIDS

Schwartz Laboratories, Inc. have recently announced that they can now furnish any desired quantities of L-amino acids including L-arginine, L-aspartic acid, L-glutamic acid, L-histidine, L-lysine, L-phenylalanine and L-tyrosine uniformly labeled with C^{14}. The specific radioactivity for these amino acids is about 0.1 millicurie per millimole.

NOREXIN

The availability of Norexin, a balanced appetite depressant, has just been announced by *Smith-Dorsey, a Division of The Wander Company.* The average dose of these anoretic capsules is one capsule three times daily, 30 to 60 minutes before meals. They are available in quantities of 100, 500, and 1,000.

ORGAPHEN TALETS—NEW DOSAGE FORM

Orgaphen tablets have been recently introduced by *Henry K. Wampole Co., Inc.* Each tablet, equivalent to 4 cc. (teaspoonful) of Orgaphen Liquid, contains: iodine (organically combined), 15.4 mg. ($^1/_4$ gr.) and phenobarbital, $^1/_3$ gr. It is indicated for conservative management of hypertension, also in thyrotoxic, climacteric, and rheumatic cases where iodine therapy, together with the accessory sedative effect of phenobarbital, is desired. Average dosage is one tablet, three or four times daily. Supplied in bottles of 100 and 500 tablets.

SUCARYL—NEW PACKAGE SIZE

A new full-pint bottle of Sucaryl Sweetening Solution, the heat-stable non-caloric sweetener for diabetics and weight-reducers, has been added to *Abbott Laboratories'* line. It is available in the calcium form for use in low-salt diets, as well as the standard sodium form.

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